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I. INFORMATION SOCIETY – ASPECTS AND DIMENSIONS
The use of the Internet as a verbal and graphic means of communication will increasingly be the mechanism for surveys, voting, model building, and face-to-face meetings and exchanges. Information technology will not only be a powerful tool in broadening participation, but information technology in its many forms will itself be the subject of many TAs.

Joseph F. Coates, Vary T. Coates

INTRODUCTION

Social valuation of new technologies is currently becoming one of the most interesting subjects of sociological studies. The rapid development of the technology market in the 21st century has not yet been evaluated unequivocally by experts and scientists. Moreover, contemporary technology conflicts, associated with negative assessment of the ramifications of proliferating particular technical solutions, are becoming increasingly complex with networking processes. Access to the Internet and the way it is used have an impact on reconfiging the direction of influence of microstructure on global systems. Against this background, technology conflicts can be viewed as epistemological products of the global economy. The specific recipients adapt, in various ways, global practices, ideas, values, institutions, turning them into elements of local culture. They also change, transform, modify and apply them in practice in specific actions, practices which can in turn affect transformations in the abovementioned global practices. The recipients of the global content also become participants in the global space production, in economic and social terms.

Participation in receiving global content can reduce socio-economic distances in a real way, neutralizing effects of marginalization of local systems by global processes. Due to the use of the Internet individual agents can have a real impact on the surrounding reality, ceasing to be only passive and helpless observers of the global space. The way of defining, understanding and evaluating technology is beginning to play an ever greater role in the process of constructing global knowledge about the nature of reality. A multitude of available, often alternative to one another, theoretical contexts applied in elucidating technology issues unbalances a certain methodological equilibrium in a networked world (Beck 1997d; Douglas, Wildavsky 1992; Foucault 1998; Giddens 1990; Latour 1987; Luhmann 2005). Knowledge and non-knowledge (of technology) cease to be in opposition to one another in contemporary technology discourse.

The effect of endowing non-knowledge with the status of another social construct, situating it on the epistemological analytical plane, renders it possible to discern new interesting relations between non-knowledge, risk and technology in a networked world in which, as authors about the most interesting scenarios for the future indicate, there will be new splits, arguments turning into conflicts connected with the way of assessing specific technologies (Zacher 2012a, 2012b, 2012d, 2012f; Wehling 2004; Nowotny, Gibbons and Scott 2001; Beck 1990; Knorr-Cetina 1981).

The use of the term non-knowledge to elucidate implications of technology transformations of societies and economies originating in the 20th century is an example of a specific way of interpretation, yet not quite so new. Numerous well-known visionaries, futurologists and economists referred to this grid of explanation in various ways (Bayrische 1993; Dake 1993; Green 1997; Wehling 2004). A theoretical anthropomorphization of technology is associated with silent adoption of the premise of a semantic combination of knowledge (or non-knowledge), technology and power in a networked world. Technologized social networks are becoming new power laboratories. Institutionalized fashions of regulating the technology market as well as references imbedded in specific cultural contexts are becoming outdated. Uncertainty, complexity, unpredictability, danger are no longer defined solely in categories of potentiality as the principle organizing social life, they are being transformed into an interesting form of a quasi-objective construct.
The development of specific technologies, imbedded in concrete cultural systems, is evidently bound by the widely conceived civilization development, advance, innovativeness as defined in terms of particular action strategies, irrespective of the adopted perspective of analysis. Creating simple dichotomies of constructivism versus technological determinism does not appear to be a rational strategy which could facilitate the comprehension and explanation of social reality technologized to an unprecedented degree. Advances in new technologies will forge the future of the networked world to an even greater extent. The way in which one assesses new technologies is, in turn, generally associated with the concept of risk in the social perception of the participants in a networked society. Risk is beginning to play the function of a global symbol applied in order to sustain and reproduce a contemporary social organization into the future. Risk is defined both in objectivist and subjectivist categories.

The aforementioned concepts of knowledge, non-knowledge, risk, technology, networked world are employed by researchers in a number of various analytical contexts to elucidate contemporary socio-economic transformations connected with widely conceived aspects of development (social, economic, civilization, educational, etc.). How can they be used to interpret the complex and multi-dimensional transformations present in visions of the future? Do the networked resources of social non-knowledge (of technology) and popular visions of the future based on specific ways of valuing technology create a new interpretation context of technologized social development in an increasingly connected world?

**DISCOURSE ON RISK**

The origins of scientific discourse on risk, which provides a theoretical base for modern debates devoted to transformations of models of technological advance date back to the 1950s. The concept was linked to developing technologies utilizing energy from nuclear power stations and a potential failure in capacity of the complex technological systems under construction (Nowotny 2000, 2001, 2003; Rip, Misa, Schot 2000). Deterministic risk analyses, attempts at risk assessment, evaluation of technologies were beginning to have an increasing impact on the institutional dimension of the social structures responsible for re-
producing and keeping social order (political, economic). Risk control and prevention in technological systems belonged to technology experts, engineers, economists. Expert power was linked to specialist knowledge, protected knowledge, classified knowledge. In those days, economic models of risk assessment, decision-taking, management, etc. gained extreme popularity.

The 1960s saw a huge change in the manner in which technology and expert knowledge were evaluated. Underscoring long-term effects of using technologies based on nuclear energy brought a division in scientific circles. Experts and counter-experts began to participate in various technology debates. The position of an expert possessing power based on expert knowledge was not only threatened but also deprived of any social legitimization in a society increasingly dependent on the development of new technologies. The semantic scope of the term risk was extended by new issues connected with its subject: widely conceived ecology, health, safety and access to discussion on new technologies development, which ceased to be an expert domain (Scheer 1987; Carson 1962). The deterministic paradigm of technology assessment was replaced by a probabilistic approach consisting of a calculated risk model and a question of permissible criteria of potential risk acceptance.

In the 1970s the discourse on risk became globalized and widespread thanks to new social movements around the issue of the hazardous nature of new technologies. Assessment of models of technological advance begins to be associated with the choice of a specific worldview based on specific values, a model of life, good and evil, visions of the future. The principal participants in the debate become now opponents of unchecked technological advance and its advocates who believe in the power of technology effectiveness (Slovic, Fischhoff, Lichtenstein 1979, 1980). It was at that time that Meadows et al. in their famous limits to growth concept, still quoted today, stressed the need to also allow for extra-economic rationalities in the scenarios for the future in the face of a deepening ecological crisis and natural resource depletion (Meadows D. H., Meadows D. L., Randers, Behrens 1972). The debates happening at the time started to be marked by slogans of conflicts of interest, partiality of experts and their involvement in dubious social systems imbedded in the market. The implication of these processes was a reduction of trust in scientific knowledge, experts, the adopted incomprehensible opaque procedures of risk assessment
and political decisions based on them. The fact that the developed western societies reduced their acceptance of risk did not remain without an impact on the emergence of new theoretical concepts elucidating the essence and effects of these changes. Psychological concepts also gained popularity.

In the 1980s the significance of the psychometric paradigm diminished in the face of the rapid development of studies in social sciences. Numerous papers were devoted to the socially conditioned human perception and acceptance of risk (Strydom 2002; Douglas, Wildavsky 1982; Knorr-Cetina 1981; Luhmann 1986). Due to the progressive institutionalization of new social movements the theme of risk became a permanent element in public debates. It was also the time of increasing popularity of the idea of sustainable development, particularly in the political dimension, and of the concept of technological citizenship based on the idea of democratization of the process of making decisions concerning the development of specific technologies (Levidow 1998; Latour 1987, 1986). A novelty in the subject matter area was also the fact that the term risk was semantically combined with analysis of society and not only of nature. The development of biotechnology and genetics had an impact on a new, more holistic way of describing civilization’s implications on technological transformations.

In those days, the very manner of defining risk and knowledge of risk was altered. Risk was no longer described only in terms of its potential nature, probability of its occurrence and non-knowledge of a possible danger. The theme of uncertainty became the forefront of the analysis. The technological non-knowledge of the essence of risk acquired a new ontological status. Risk began to be considered as a global phenomenon whose inherent feature was spatial, time and social delocalization (Beck 1997a, 1997d, 2003, 2005; Luhmann 1986, 2005). The globality of risk was linked to its incalculability, irreversibility and incompensability (Beck 2002, 2005).

During the analyzed period, numerous interesting conceptions of risk, still quoted today, were formulated in the social sciences. Ulrich Beck introduced the concept of risk society, emphasizing the non-deterministic nature of threats occurring in developed societies (Beck 2005). This concept presented risk as a by-product of the process of modernization distributed within a transforming
social organization. The increasing complexity of risk renders necessary to redefine the role of the expert and scientific knowledge of future consequences of technological advance, which ceases to be predictable and calculable. Accordingly, scientific knowledge acquires a similar status to non-knowledge. The former becomes increasingly helpless in a risk society, in which it is the media that play the key function in the social process of communicating and defining risk. Irremovable risk affects the market, changing its logics. Beck also emphasized the political potential of risk.

The subject of risk is also present in the works of Anthony Giddens, who underlines the increasing significance of manufactured, not natural objective risk in developed societies (Giddens 1990, 2003). Interestingly, he pointed to socially organized knowledge as a source of risk in late modernity. Semantically he separated it from cosmology and extra-rational ways of interpreting the surrounding reality. Hence, risk is a product of modernity, a social construct similar to socially manufactured nature. Risk becomes globalized. Human knowledge systems impact on generating new risk contexts, creation of institutionalized risk spheres, formation of a global risk awareness, accelerated transmission of expert knowledge to a new public, extended by non-experts. Access to expert knowledge entails a whole host of practical implications in the form of reduction of trust in expert knowledge, its depositaries and abstract systems. In the society of late modernity it is not just the objective distribution of risk that undergoes changes but also the way it is perceived and experienced. In the discourse, risk becomes a tool of colonization, which makes it de facto even more unpredictable, potential, liquid, multi-context and multiple in the number of possible scenarios. In technologically developed societies, strategies for coping with risk must by necessity be based on human trust in abstract systems. The concepts of non-knowledge, trust and acceptance of risk are beginning to co-exist in a transformed semantic base. The metaphor of the iron cage is becoming outdated in the face of the need to accept completely new forms of risk.

The term risk functions is used theoretically in most meta-narrations of modernity and about the future. The theme of mediation of the social world in its technological dimension, its consequences and challenges faced by humanity, *humanness* bound up with an increasing technology interference in the individual, so far intimate world, still belonging to areas uncolonized by sociological
theories. Among researchers on technological advance the most frequently cited in our times are the already mentioned U. Beck, A. Giddens as well as N. Luhmann, M. Foucault, and in Poland Lech W. Zacher. Thus, constructivists dominate the sociological discourse about risk. A fundamental issue continues to be reflexivity about technologized, to an increasing degree, social systems.

Luhmann is one of the radical constructivists. According to him, risk has substituted the idea of fortune in modern society. An epistemological transformation of the word is linked to departure from explaining the causation of specific events with reference to supernatural order. Risk is treated by Luhmann as a form of communication within an autopoietic system (Luhmann 1986, 1995, 1998, 2005). The specific way of communicating issues concerning development of new technologies affects the perception of particular solutions as risky. However, risk is calculable for people in specific decision-making situations, as an invention of *modernity* and a *product* of a self-referencing social system. Acts of individual decisions based on the free will of choice, social activities of system participants provide the semantic context for understanding risk in the self-sustaining contemporary world. Any attempt to make a specific decision, in a society undergoing permanent functional differentiation, would be risky because the future is epistemologically inaccessible (Luhmann 1979, 1990, 1992). The future is, therefore, in principle, risky, in spite of the fact that the system also produces mechanisms for risk reduction.

Foucault – another constructivist, argued that risk is an example of the government strategy of regulatory power by means of which a society is monitored, supervised and controlled (Foucault 1993, 1998, 2002). Risk is controlled by a heterogenous network of interactive actors, institutions, knowledge and practices. It is an example of power based on compulsion, it is indirect and aggregative (Foucault 2002). Experts play an important role in the process of knowledge distribution. Expert knowledge creates specific discourses on risk in modern societies by referring to tools of rationality and calculability. Authors relating to Foucalt’s line of thought emphasize an interesting transformation of the ways of conceptualizing and coping with risk related to recognizing the *rationality* of risk itself (Gasparski 2004).

The fundamental difference in the way risk is conceptualized is associated with
its status, ontological or epistemological, adopted by individual authors. Advocates of the epistemological perspective (Luhmann, Duglas and Widalvsky, Foucault) are in agreement in their conviction about the imaginary nature of risk, which cannot be identified with a real (objective) danger. They consider debatable the cognitive accessibility of risk in an objective sense.

Risk is also interpreted as an objective phenomenon used to describe objectively existing dangers (the technical model of physical risk). In the sociological conceptions employed to elucidate transformation of risk in developed societies, one can discern a theoretical eclecticism combining the two positions (Beck 1992). Risk is presented as existing objectively. It is defined in categories of features of technological systems. Risk can also have a subjective nature. It is then interpreted in categories of collective imagination, shaped by specific social processes. There is no doubt that in technologized societies risk may be treated as an example of a social problem.

TECHNOLOGY-BASED FUTURE

*One can say nothing new about the future. The future is now, only unevenly distributed.*

William Gibson²

*People like us, believing in physics, know that the difference between the past, the present and the future is only a persistently present illusion.*

Albert Einstein³

Nowadays, all the abovementioned ways in which risk is constructed by participants, recipients and co-originators of the technologized social reality have a significant impact on the created scenarios for the future in a connected world. One of the most important technologies which has played an essential role in the process of semantic reconstruction of the past and construction of an ontological base for the future is without doubt the Internet. The socio-technological


³ Albert Einstein, Letter from Einstein to the family of his lifelong friend Michele Besso, after learning of his death, (March 1955) as quoted in Science and the Search for God: Disturbing the Universe (1979) by Freeman Dyson, Ch. 17, “A Distant Mirror”.

immersion of Internet-users implies a series of transformations in the way social meanings are constructed globally (Zacher 2012f, 2013a, 2013b). The meta-medium facilitates the contemporary conceptualization of a the part of social knowledge connected to risk-definition and perception. The Internet is a technology which both provides the frames of an electronically mediated social order and is formed by its users. Depending on the social context, the technology of power is simultaneously a tool of power.

Modern models of technological development paths and based on them conceptions about the future are becoming outdated in a connected world. In the discourse about risk one can observe a specific collage of post-humanistic and classical humanistic reflection. Technology is perceived as an example of an autonomous being, self-determined, uncontrolled, independent from human will. A dehumanized vision of the development of artificial intelligence co-exists with the discernable need to justify the purpose of technological development so that it could be instrumental in the integral development of the multidimensional social civilization. Thus, the Internet equips agents with a new causative power, reducing the absolutizing effect of technology on the ways in which visions about the future are constructed. Thanks to the use of the Internet, individual agents can have a real influence on the surrounding reality, no longer being only passive and helpless observers of the global space. The Internet is becoming an interesting bond-forming and integrating tool. In a connected world, it is not only the structure of power that undergoes transformations but also the way in which knowledge is constructed and distributed. It is becoming more accessible, modifiable, increasingly uncertain and risky. The potentiality about a permanent reconfiguration of knowledge, increase of its contextuality, politicization and marketability does not remain without an impact on the semantic transformation of the notion of knowledge. It is a liquid structure, non-established, awaiting to be filled with new meanings.

Knowledge and non-knowledge play a very similar function in the process of social valuation of technological advance. Yet their rapid growth and electronic multiplication do not result in a rise of reflexivity among the participants of the networked order. For the development of expert knowledge is increasingly axiologically and obligationally entangled. Experts represent difficult to identify networks of power and knowledge. Expert knowledge turns into an interesting
simulacrum. The ideas about the democratization of access to the technological debate are also an expression of a desire to recover the epistemological subjec-
tivity of the participants in the technologized society and a definitive desubjec-
tivization of technology (Zacher 2012e, 2012d, 2012c, 2013b). The network
fields of non-knowledge being created produce ever new frameworks of refer-
ence for understanding the ongoing transformations. Risk is entangled in con-
stantly transforming and being transformed network structures of knowledge
and non-knowledge. Both the former and the latter play an important function
in the social constructions of risk being formed, transformed, destroyed. The
very way in which risk is understood is connected with the underlying real threat
only to a slight extent. The non-knowledge associated with risk consists of un-
certainty and ignorance. Probabilistic calculations and qualitative predictions
are becoming increasingly difficult, when one takes into account the social as-
pect of assessing the impact of new technologies.

The future is a specific example of an epistemological product of ongoing de-
bates: unstable, based and dependent on the chosen path of technological devel-
opment. The way in which technology risk is justified continues to be firmly
grounded in epistemological analyses. Sociologists are particularly strongly at-
tached to them, less and less frequently premising their way of justifying
 techno-transformations on ontological thinking. The rapid development of
 techno-science necessitates a specific axiological reconstruction of the social
 knowledge and non-knowledge about risk in a connected world.

Knowledge and non-knowledge are not two opposing systems of meanings in
the networked reality. Scientific and social controversies associated with tech-
nology assessments are becoming permanent elements of the ongoing discourse
about risk, technology and the future. Moreover, scientific explanations do not
lead to a better understanding of the essence of the technological transfor-
mations. It is also difficult to point out particular ontological features of non-
knowledge in the discourse about risk. The maps of the areas of scientific un-
certainty are not linked with a objective status of risk in the connected world.
The manner of social categorization, of defining specific problem contexts of
technological development determines the process of transformation of non-
knowledge into knowledge. A particularly important role in the process of so-
cial valuation of technology is played by the Internet. One can forecast that in
the future this medium will have an even greater influence on transformations of the discourse about risk itself.

In a networked world, there exists an extremely interesting way of virtually mediated construction of non-knowledge and knowledge about technology, its functions and economic implications, which may affect the way technology is assessed (Zacher 2012b, 2012d). The development of science is to an increasing extent dependent on processes which take place in the social, economic, political etc. reality which is external in relation to science. Ever new areas of technology risk and non-knowledge will crystallize in a networked society. The question about the nature of scientific cognition in the context of the ongoing discourse about risk does not appear to be the only justifiable one. Unconscious mechanisms of risk-production could be situated on the same analytical plane on which conscious, deliberate, intended and thus politicized systems of non-knowledge production are located. An entanglement of sociological analyses in the constructivist discourse can still be seen. Irrespective of recognising the ontological status of risk as an objectively existing threat, the most interesting aspect of the ongoing discourse still remains the construction of social narrations about technology valuation.

The Internet and cyberspace are transforming into interesting, multidimensional laboratories of power in the discourse about risk. In a digital world, the distance between the subject and the object of power is being reduced. A technological future is constantly being produced and reproduced in a virtual, connected world. Risk also has a more and more productive character, creating a certain reality, narration and normalizing it. Memory of the future becomes a permanent element of ongoing debates on risk and technology. Non-knowledge and knowledge are treated equally in the conflict-generating social arguments about the essence of technological innovations. The scenario about a risky future seems to be the dominant vision about the development of the technologically mediated reality.

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Rationality is one of the most important problems which everybody has to solve every day in their thought and in their activity; the process depends on their knowledge and their ability to analyse reasonably. Rationality is also a theoretical problem and science representatives, open-minded thinkers, who tend to liberate themselves from thinking and acting not based on reason, try to solve it consciously by giving it a form of a concept or definition. Humans not always and not everywhere try to be rational and if they do they only partly succeed. Since the Age of Reason, when the primacy of mind in the process of human cognition was established, philosophers have had endless arguments concerning the essence and borders of rationality and its components: universal and casual, scientific and emotional, positive and negative, useful and abstract. That is why before one characterizes rationality in information societies, where information becomes the most important merchandise and commonly used value, one should explain convictions and statements which dominate reflection about rationality.

The first point concerns the considerable limiting of human cognition and activity described by Jan Szmyd in the following way: “next to ››the order of mind‹‹ in human personality there is always ››the order of heart‹‹ and human affairs happen both in the area of rationality and the area of emotions. [...] There is no man functioning as logical machine” (2003, 115). In other words, rationality and irrationality are in many ways connected and they always exist in various degrees and various proportions.

Secondly, rationality is a historical category; therefore its every kind and model are contractual and not permanent. It always dissipates and it is the answer to current possibilities and human needs. Its impermanence is also determined by the fact that on one hand it refers to general rules (among them philosophers most often point out the rule of responsibility), but on the other hand it takes
into account specific conditions and circumstances connected with a particular situation (Lenk, Spinner, 1989, 21-23).

What is more, rationality does not remove completely doubts which individuals have as constantly hesitating creatures, forced to make many decisions. Lech W. Zacher draws attention to that when he asks the difficult question referring to practicality: “What [...] is more rational – maximizing of good consequences or minimizing of bad consequences?”; he even uses the notion “McDonaldization of rationality” (2000, 14). There are multiple examples which illustrate the variability of rationality.

Epochs and cultures produce various, different rationalities. In the information societies which in the 21st century function within and through the so called participatory cultures rationality gains a new character. Individuals and communities in participatory cultures “take converging media in their own hands”, become very active, have their own dialogue with the media, thanks to them create new social relations, think, work and through the media acquire new competences (Jenkins, 2006, passim). Anxiety expressed by Kazimierz Krzysztofek is a good point to start the characteristics of rationality which include its specific features. He asks: “why the crisis of rationality (which can be seen in the explosion of sects, fideisms, pagan pantheisms of all kinds, fortune-telling, palmistry, believing in paranatural phenomena and others) happens at the time of the offensive most functional for the ratio of information technology and intelligent networks? It may be caused by the fact that the more technology is filled with intelligence and »zero-one« rationality and rules of implication, the more mass man feels the need to look for sense in irrationality, the sense which was provided by pre-rationality” (2000, 123; Davis, 1998, passim). Many scholars nowadays present the opinion that the horizons of rationality constantly broaden because science approaches the belief in God (for example To Broaden the Horizons of Rationality. Perspectives for Philosophy – it is the title of international symposium organized in 2008 by Pontificia Università Lateranense). There are of course researchers who express quite the opposite opinions but without doubt the popular in the 20th century thesis concerning the quick secularisation of contemporary societies is quickly becoming a myth in the 21st century.

Taking into account these findings and the dynamic changes taking place in in-
formation societies, which generate an increasing number of blurry situations, communicational “ecstasies” and “spasms” and forms of unbridled material and symbolic consumption, in the reflection over rationality and in practicing it we have to go beyond the traditional research approach and methods of acting based on them. For example the classical division of rationality needs modification. It was introduced by Tadeusz Kotarbiński in the middle of the previous century and includes methodological rationality, which demands logical thinking in accordance with the scientific knowledge one possesses, and factual rationality which demands choosing means which are suitable for real situations, events and facts (1955, 137-139). Both rationalities are used today but it seems that both do not include the openness of thinking and functioning of the new media users – the methodological one mainly because of the information redundancy, multidisciplinarity and the so called WiFication (collective creating of knowledge mixing expert and common knowledge), and the factual one because of the fact that part of human thinking and acting moves to the Internet, more and more interactive people’s attitudes to the world, game-rivalry and advergaming (using game mechanism in communication which allows to easily change every rule). Still it seems that factual rationality, which is more participation-in-culture-oriented but less reflective, gains supremacy over methodological.

I leave the dilemma unsettled, because in the epoch of glocalization and creating a new political economic and social order many aspects of individual and community thinking and acting can change. I assume that the notion of particular rationality more precisely illustrates the nature of this thinking and acting in the information society. It shows businesses, choices and decisions both individual and over-individual but local and contextual. It shows the increasing meaning of subjectivity, spontaneity, personalisation, non-obviousness, and undecisiveness in the everyday technological routines increasingly divided between reality and virtuality, using Wolfgang Welsch’s notion – transversal techno everyday routine. He writes about rationality when defining transversal mind which is not a monolith but “plurality of forms of rationality” (2002, 186). I base my view on conclusions drawn from Max Weber’s analyses “which referred to rationality as model foundation of social processes which initiate changes in western countries and confirmed the suspicion that rationality treated as a form of life can be itself also a refined form of particularism” (Mittelstrass, 1995, 478), as
a matter of fact the opinion proves the accuracy of Weber’s predictions.

Following this way of thinking, a few years ago I conducted preliminary research of the particular rationality character in information society (Miczka, 2010, 191-198). I found four meanings of the notion “rationality” useful in the research although they do not fully describe the actual state of things. They were mentioned by Eugeniusz Geblewicz at the dawn of digital break. He wrote in the text What Does It Mean “To Behave Rationally”: 1. The one who does not follow a sudden impulse but takes into account the consequences of their action behaves rationally. [...] 2. The one who chooses efficient means to achieve particular aims and uses knowledge in a well-justified way while choosing them behaves rationally. [...] 3. The one who in his choice of aims of action follows the hierarchy of values accepted in a particular community, in other words acts according to some recognized preferences or according to certain hierarchy of motives, behaves rationally. [...] 4. The one who is consequent in his action, in other words does not follow contradictory rules, behaves rationally” (1975, 25-30). I believe these praxeological criteria are constantly breached by internauts, who are more and more spontaneous, more rarely think about the consequences of their behaviour. They breach scientific orders and logic and often replace hierarchy with forms of heterarchy and panarchy or even anarchy, they quickly and easily change rules even to the opposite. That is why I consider that the notions of rationality put forwrd by Geblewicz should be complemented with at least one additional aspect of practical and particular human thinking and acting which Kazimierz Jodkowski drew attention to in Poland at the dawn of the digital break (although it did not take place in Poland yet) proving that “cognition – a special kind of activity – is perceived as rational when it is intersubjectively full of sense (can be communicated) and can be intersubjectively checked (controlled)” (1988, 157).

Such a multifaceted approach to rationality is connected then with the most important phenomena characteristic of the information society. Although it does not guarantee a full description of its present phase of development it still definitely signalizes problems important for its future, such as ways of communication or freedom and control in cyberspace, therefore also in real space. There are heated debates around the world concerning communicability and controllability, related to new trends and currents in using advanced technology. Their
emotional temperature can be described by extreme statements such as” “we communicate for communication itself” and “everybody can communicate with everybody” or “thanks to multimedia we are absolutely free people” and “we have never been more controlled and manipulated than we are today”. Thinking about rationality we first focus on the competences of homo interneticus which I call info-activism and info-freedom.

Rafał Stec writes ironically about the communicational activity of a typical member of a developed information society: “he is never switched off [...] he defecates continuously, publicly, without any inhibitions” (2012, 23), and Robert Siewiorek writes that he is “overworked” not hard-working because it would be useful as an authentic activity and he is just busy with manifesting how much he works (2013, 22). He constantly changes as a person: he is a student, flâneur, player, newbie, client, lurker, luser, voyeur, ladmin, troll, hacker etc. Today thanks to the smartphone, a multifunctional follower of a mobile phone, and ephemeral “digital cloud”, which replaced a computer hard disk, the multimedia users think and act rationally when they master the details of multitasking, which is using a few appliances simultaneously. Research shows that info-activism broadens the range of human cognition but it limits attention, reflectivity and the art of profound experiencing of matters, it promotes evanescence, superficiality and digesting someone else’s content. According to Kyung Hee Kim it increases the intelligence quotient (IQ) but it lowers the level of creativity quotient (CQ). It simply limits imagination (2011, 285-295).

The image of info-freedom created by research is also exaggerated and full of contradictions. This is not surprising when we take into account the fact that “control through freedom” dominates in the information society (Lessig, 2004). Emotional quarrels between the cyberlibertarians who demand absolute freedom (supporting among others hackerism) and the cyberpaternalists who suggest creating a new law including new communicational competences, have not so far suggested practical solutions. As Manuel Castells notices: “The source of knowledge today is mainly the possibility of creating and distributing cultural codes and information contents [...] the problem of social control over the Internet is probably the most fundamental political issue of information era” (2001, quotation from the Polish edition 2003, 186-187). It is difficult to predict unequivocally the future of the information society. Traditional logic suggests
that it should transform into a post-information one, for the time being we live in big data society (it is symbolized by *homo oeconomicus* i *homo marketiensis*), in which technologies of self-record and self-display breed, the expansion of the market is unprecedented and the quantity and nature of the tools become the criterion of rationality, mainly particular rationality.

To sum up, in the first half of the 21st century a particular rationality develops most intensively which provokes various counter-reactions in society and is under increasing pressure from global processes. People become less rational in the traditional meaning and more sensorial and programmed by technology. It can be said that they become proportional mainly because a particular rationality turns out to be a refined form of irrationalism. K. Krzysztofek states a characteristic example of such transformation and again I let him speak at the end of my essay: “What will happen to rationality when technology with superrational information technology will govern spiritual environment of man and according to T. Adorno it is already its part to an extent we do not even realize. One of its symptoms is what Jean Baudrillard calls hyperreality, the world of simulacra. Can one be rational while experiencing less and less of the real world? (2000, 130).

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THE ROLE OF RETENTION AND DATA ANALYSIS IN THE UBICOMP PARADIGM

ETHICS OF DATA BASE VERSUS IRRATIONAL RETENTION IN THE UBICOMP PARADIGM

From the perspective of intelligent systems, a human being is only a data set, an object of a particular specificity and pattern of behavior that can be observed, calculated and modeled. Thus, society may be perceived as a gigantic collection of such individual sets or bundles of data – a collection which is also measurable and can be precisely designed due to some sort of predictability and repetitiveness of patterns. Similarly, after centuries of research, ethologists also find today repetitive elements and sets of behavior in the world of animals. The elements and sets have only recently been recorded and described by means of mathematical functions and professional programming languages which subsequently become the basis for visualization enabling to understand the meaning of particular phenomena. In broader behavioristic terms, culture can actually also be seen as merely a mathematical function according to which schemes of individual activities and patterns of culture of social groups (smaller and bigger sets of elements and data sets or bundles they are connected with) can be recorded, calculated and modeled.

This situation has consequences for contemporary culture. It is not enough to simply perceive cyberculture as the dominant form of culture where the phenomenon of syntopia of art, science and technology described by theoreticians takes place. Nowadays it is technology that determines our place in the social fabric of human relations, nothing else than technology enables acts of communication and lets us exist as social units. Technology – which itself is an expression or product of culture – has become the basis for existence of culture and

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determines its functioning to a far greater degree than in previous epochs (and in a broader way – on a global scale). These days technology constitutes society and constructs people and their identities anew. Technology of networks and mobile media has become an instrument of deconstructing privacy as we historically have known it. The ubicomp paradigm (ubiquitous computing, pervasive computing)\(^2\) which facilitates the exchange of every kind of data among networks, systems and intelligent objects or their swarms may, along with the development of cyborgization and bio-hybridization of society, contribute to a cultural leap or a complete disaster in the nearest future.

It is worth studying several phenomena which are symptomatic of contemporary culture that has been imperceptibly (yet inexorably) dominated by the ubicomp paradigm. All phenomena prove that huge data sets, which are often collected automatically by intelligent networks regardless of our awareness and will, constitute a crucial element of the contemporary cultural landscape which is apparently of greater importance than the one we have attributed to any images so far. The meaning of data visualization is not as important as what is hidden behind such an image – hidden senses which are disclosed to those who are able to undertake appropriate analysis (it is more about data base ethics than Manovich's data base aesthetics). Methods and goals of data collecting and analyzing discussed in the text also show where the boundary between the private and the public is marked nowadays, and the way public discourse on data is being constructed – how the issues of data openness and retention are politically dealt with for the purpose of specific governmental, business or social institutions. Data have always had a political dimension, even if they seem insignificant and trivial. Everything depends on who owns or has access to data and what they are going to do with them, for what or against whom they want to use them.

Unquestionably, we currently see a tendency of almost irrational retention of data – from strategic to the potentially insignificant. However, the value of any data base stems from its rich content – to which fact Kevin Mitnick drew attention a long time ago while writing about his hacker past and (often surprising)

methods of stealing data and manipulating information. Up till now his methods of illegal retrieving of data and exploiting their power have not become invalid, only the range of technical possibilities has been widened. Nevertheless, it is still the human being who turns out to be the weakest link in the systems of confidential information circulation (e.g. Bradley Manning, Edward Snowden etc.). A growing number of scandals connected with leaks of strategic data such as packets of confidential documents regularly published by Wikileaks show that the game of closing and opening data, making information confidential or public – the game of a spy, political, ideological and often even military character, which has a lot of players is still going on. It is worth remembering that owning data might sometimes be a sign of power, and at other times sign of weakness (as evidenced by the case of Julian Assange). Undoubtedly, efficient retrieving of knowledge from seemingly abstract data sets and the ability to analyze and extract information can give an immense power.

Nowadays we can observe various approaches towards data. Politicians, terrorists, controllers, collectors, cyberactivists and designers are still negotiating the scope of freedom of information and openness of data. It is a conflict of interest between the famous concept “information wants to be free” by Steward Brand with a romantic global community of Internet users gathered around this ideal, and business goals and ideas of Internet companies and a global cast of politicians and data managers. We might thus speak today of a certain tension between the feeling of insufficiency and of plenitude - deficiency of: freedom, openness, privacy, self-determination, understanding and order, and surplus of: data, information, control, emotions, politics.

**DATA AND POLITICIANS**

Due to their vastness and hermetic nature raw data sets can be perceived as vague and overwhelming. A proper, even if uncomplicated, visualization of such data can, however, be transfixing, a perfect example of which is the case of Malte Spitz. Let us compare two files – the first one comprises raw data:

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35830 lines of digits and dates in an Excell spreadsheet; the other is a visualization: a point moves along a given route drawn on a Google map which – as usual – can be zoomed in and out, one can also change the map view into the satellite view or trace the route as it was for a chosen period of time\(^4\). The point is surrounded by animations which show turning circular sectors in various shades of red and animated icons of a cell phone, text message or e-mail. It is a visualization of data collected by Deutsche Telekom (T-mobile) within six months from September 2009 to February 2010 and made available to their owner (or rather producer)\(^5\) – Malte Spitz, a German Green Party MP who decided to sue the mobile operator after several ineffective attempts at obtaining the data. Only under a judicial decision did he receive the set of data he had asked for. He wanted to know which particular data related to him were owned by the telecommunication company whose customer he was. Having obtained the set of data, he decided to make it public and visualized in cooperation with Open Data City and Zeit Online\(^6\).

The data present six months of Malte Spitz's life. It is him who is traced as the point visible on the map. The route marked by the point is the route he actually followed. The circular sectors are the logs of the phone in the nearest cell phone base stations. Such logs enable defining the route, speed of movement and stopping points. Moreover, we know which phone numbers Spitz communicates with, which websites he connects to in order to receive or send information. On the basis of such a data set – which seems a general one – routes, communication patterns and life rituals of a traced user can be precisely defined. It is possible to acquire information about places they stay in, people they meet, means of transport they use, how often and what time they follow given routes, who they communicate with, where they live, where they sleep, where, with whom

\(^4\) The files are available on Zeit Online website – the visualization Tell-all Telephone on the following website: <http://www.zeit.de/datenschutz/malte-spitz-data-retention>, the Excell file can be downloaded using Google Docs from the same website (access: Dec 1\(^{st}\), 2013).

\(^5\) They can also be called "context providers" as Michał Derda-Nowakowski did in his essay: Dostarczyciele kontekstu. Cyborgiczne aspekty komunikacji kulturowej. "Kultura Współczesna" 2013, nr 3 (78), s. 118-130. From a legal point of view originator or producer of data is not actually their owner or not the only owner, at least until the moment they submit a request to an institution retrieving data for the access to them. The process happens to be long and is not always a success which is proved not only by the example of Malte Spitz but also of a British artist Manu Luksch or an Austrian Josef Klammer. While being a traced subject we transform into "an object of monitoring", and, thus, system and technology symbolically deprive us of our subjectivity.

and without whom they go (thus, indirectly, what their network of contacts is – who they work with, who they live with, whom they love and whom they miss, yet also: who they conspire with and against whom). Thus, it is not abstract but specific and detailed knowledge. It is also the knowledge which enables precise anticipation of a user’s future activities on the basis of their algorithms (rituals) of everydayness.

In this situation the decision to publish the data becomes some sort of a challenge, also in a political sense – which Malte Spitz is aware of as an opponent of the European Union directive on data retention and the earlier German legal bill making ICT and telecommunication companies retain metadata from all users' phones for at least six months\(^7\). Kai Biermann draws attention to the fact that a legal bill of this type potentially penalizes all citizens as it automatically gives them the status of suspects and thus breaks the centuries-old legal tradition (one is innocent until proven guilty)\(^8\). Spitz himself claims that the legal basis and technical possibility of collecting data may influence the course of political events – had such technologies been available in 1989, the Berlin Wall would have never been destroyed\(^9\).

The situation described above seems interesting for a contemporary culture researcher for many reasons – firstly, it clearly shows the relation between knowledge and power (data become its direct instrument and an everyday object turns out to be a surveillance tool), secondly, the way of disclosing private data by a politician is actually another element of their strategy or political fight and it is deprived of its private character (data become a means of putting pressure on opponents), it is rather a part of a well-directed performance for networked masses who ex definitione present an anti-system attitude. Undoubtedly, for the politician it was also a successful PR technique aiming at increasing his political recognizability and multiplying his social or electoral capital. On the other hand, specialists in data visualization emphasize that the act of disclosing metadata by Spitz stimulated the already slightly waned public debate on data

\(^7\) See Malte Spitz’s lecture at TED conference. Malte Spitz: Your Phone Company Is Watching. TED Talks: TED Global Conference, Edinburgh, Scotland, June 2012. <http://www.youtube.com/watch?v=Gv7Y0W0xmYQ>, (access: Nov 30\(^9\), 2013). In his lecture Spitz mentions a European Union directive which aimed at retaining telecommunication data for 2 years, an article in “Die Zeit” from the previous year was referring to the legal act effective in Germany which aimed at retaining data for 6 months.

\(^8\) Biermann, op. cit., p. 1.

\(^9\) Spitz, op. cit.
significance, their retention and potential threats\textsuperscript{10}, which undoubtedly goes beyond the political theatrum.

\textbf{DATA AND TERRORISTS}

Practices of data analysis are also used in another kind of discourse – by terrorists who not only treat journalists as their messengers and media as serviceable information channels, but also as measurers of their success. An interested example is provided by Marc Goodman, a counter-terrorism expert, who analyzed the attack against the Taj Mahal Hotel and other buildings in Mumbai in 2008. Google maps (especially Google Earth) and other commonly available tools such as cell phones are, of course, frequently used by terrorists\textsuperscript{11}, this time, however, the attackers constructed a kind of media monitoring agency and, according to Ajmal Kasab, the only assassinator caught and questioned by the police, they adjusted their actions to the media information itself.

Victims were chosen by terrorists on the basis of their documents and remotely identified thanks to a telephone consultation with the terrorists in the command centre who were checking personal data of hotel guests on the Internet. Goodman even states that the Google search engine decided who would survive and who should die\textsuperscript{12}. According to him, a similar role can be fulfilled by social networking sites in the future. The purpose of the terrorists was to attract the international public by means of global media which quickly provided information about executions of rich businessmen, financiers, a journalist, foreign tourists, a Bollywood actor's sister, hotel manager's family, representatives of special services and several policemen\textsuperscript{13}. For four days the terrorists, aware of the way information spread, set a specific agenda for the world media, in ac-


\textsuperscript{11} I wrote about it in the context of Google Maps and Google Earth. See: A. Maj: Mapy Google jako nowy model kognitywny. O imperium, które zbudowało mapę w skali 1:1, jego strategiach wizualizacyjnych i polityce. „Przegląd Kulturoznawczy” no. 2 (10), 2011, pp. 5-30.


cordance with the Maxwell McCombs model\textsuperscript{14}. It has to be admitted that the attack received spectacular media coverage even in Poland – it was presented live on the TVN24 channel by a Pole (Jan Masiel, member of the European Parliament) who was trapped in the attacked Taj Mahal Hotel and whom journalists and guests invited to the television studio located on the other side of the world advised on how to behave towards the terrorists\textsuperscript{15}.

Considering the unusually high technological awareness of contemporary criminals (building their own cell phones stations by mafia, printing weapons by means of 3D printers, using drones for remote executions), Goodman predicts a possibility to prepare direct bio-attacks on particular persons, for example leaders of states, in the near future (by means of modified viruses attacking selectively specific DNA)\textsuperscript{16}. In this sense, biopunk ceases to be a mere artistic activity performed at international festivals of cyberart and becomes a thoroughly political activity. It sheds completely new light on experiments by artists such as Eduardo Kac or artistic groups such as Art Orienté Objet\textsuperscript{17}, yet also on the ideals of openness and accessibility of technology propagated by various medialabs\textsuperscript{18} or on new media museums (e.g. Ars Electronica Center in Linz which promotes Bio Lab, Brain Lab and Fab Lab).

Ultimately, a new liminal context in which the data appear is interesting here – the identifying function is fulfilled not only by documents (they can be false) but records in Google or Facebook databases (which disclose more information, in a more direct and – paradoxically – more reliable way\textsuperscript{19}). The role of providers of knowledge has risen to become the role of a demiurge, a gigantic repository of data becomes an ultimate point of reference for someone’s existence. On the other hand, the role of Google or 3D print should not be demonized – it has to be indicated that all new media (in every epoch) were used to the same


\textsuperscript{15} I watched the TVN24 program with Jan Masiel live on Nov 26\textsuperscript{th}, 2008. See also: Plonie hotel Taj Mahal; Masiel: Zaczynam obawiać się o swoje życie. PAP, WP.pl. URL: <http://wiadomosci.wp.pl/kat,1356,title,Plonie-hotel-Taj-Mahal-Masiel-zaczynam-obawiac-sie-o-swoje-zycie,wid,10609752,wiadomosc.html> (access: Dec 1\textsuperscript{st}, 2013).

\textsuperscript{16} Goodman, op. cit.

\textsuperscript{17} See e.g.: Eduardo Kac “GFP Bunny” (2000), “Natural History of the Enigma” (2003–2008), Art Orienté Objet (“May the Horse Live in Me” (2011), etc.


\textsuperscript{19} I wrote about mistakes and unreliability of Google tools in the scope of cartographic representations in another text: See: A. Maj: Mopsy Google…, op. cit., passim.
extent by villains and by forces of law and order, e.g. the telegraph and Bell's telephone were used by both the police and bandits. One may assume that the ubicomp paradigm will not change this situation – the coexistence of intelligent objects, buildings and things connected in the networks which are responsive to each other and which trace suspicious activities does not mean that terrorists and mafia will disappear, it means that they will hide in a better way and will use newer camouflage techniques and more effective and safer communication technologies (or counter-technologies). Even if an intelligent super-system collected various data on environment and individuals moving within the environment, it would not probably be a perfect system.

Even today urban surveillance systems generate numerous moral issues. The problems are mainly connected with infringements to privacy of filmed people and also with the quality of images which do not always clearly indicate who the filmed individual is. Although there are programs analyzing individuals' movement patterns (motion capture systems) which enable identification on the basis of even poor-quality images coming from CCTV cameras, they have not fully annihilated the question of adequacy of reading CCTV data which sometimes serve as the basis of judicial indictments. Moreover, ubiquitous monitoring systems have not eliminated criminal acts and offenses in city centers. Data retention is almost perfect, yet the analysis of huge data sets can be assessed in a far more negative way. The situation is similar in the case of a terrorist using Google search engine who can also make a mistake and kill a wrong person on the basis of the obtained search results, especially those consulted via telephone, or bombard a wrong object on the basis of false geolocation data in Google Earth.

**DATA AND HACKERS**

We are almost imperceptibly accompanied by intelligent systems in urban space. Though not only buildings or public space are packed with technology. The smart object category refers also to other things – from the tiniest particles

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(smart dust) to rather big ones, such as cars and vehicle fleets. Avi Rubin correctly states that all such objects are potentially exposed to hacking, even cars or implants applied to human body, especially since they began to use wireless communication. Rubin perceives the threat mainly in popularization of WiFi and Bluetooth standards in communication (giving 2008 as the cut-off date), however, it should be mentioned that Kevin Warwick's implant also communicated wirelessly in 1998 – indeed, via quite safe radio signal (RFID), however this technology applied on a wider scale may enable tag (chips) monitoring - and thus, indirectly, also the monitoring of activities of individuals, collecting strategic data on an individual or stealing such data directly from a chip or IT system. Warwick himself does not seem to be frightened by the idea of his implant being hacked. The aim of his experiments was to demonstrate diverse functionalities of chips and to examine the functioning of the technology itself. However, it needs to be remembered that he is one of the top technophiles of our epoch and a protoplast of the cyborgization trend.

The research teams of Tadayoshi Kohno's and Stefan Savage’s took a different approach - they prepared an experiment which was significant not only from the perspective of contemporary engineering and computer science but also from a cultural point of view, especially in the field of cybernetic communication (the experiment demonstrated a complex relation between the paradoxical awareness of imperfections of high technologies and the trust we put in machines and networks). The purpose of the experiment was to check which elements of intelligent vehicles available on the market can be hacked. The researchers wanted to examine the weaknesses of contemporary intelligent objects of everyday use in which we often put trust as far as our lives are con-

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22 Kevin Warwick: I, Cyborg. University of Illinois Press, Urbana and Chicago 2004, passim. It also needs to be added that the WiFi and Bluetooth inventions stem from the 1990s and have their roots in the 1980s (WiFi was invented in 1992 and Bluetooth in 1994). At first they were used in cash systems.


24 Interview with Kevin Warwick during the New Media Days II conference: “Faces of cyborg”, November 22nd–24th, 2010.

cerned. Unfortunately, the experiment went unexpectedly right. Using the reverse engineering method the researchers and their teams demonstrated that intelligent cars can be hacked with the usage of relevant software and practically every important part of the cars can be inactivated (which may be the cause of an accident, for instance). They also proved that it is possible to construct the code in such a way that the hacker’s intervention is undetectable after an accident\textsuperscript{26}. The attacks were conducted in several different ways – by direct connecting a laptop or a processed iPod to a computer or by the usage of wireless networks (GSM and WiFi); at the time when vehicle is stationary and at the time of driving on a special track. All this testifies to a number of possibilities to manipulate the machine. The car elements which can be hacked are: engine, brakes, lights, speedometer, wheels, dashboard, gearbox, heating and ventilation, radio, door locks etc. Thus, one can remotely turn the machine on or off, assume control over it or selectively turn on or off parts of a moving vehicle. Although it sounds like a script of a B-class horror or science-fiction film, nowadays such telematic solutions are standard practice in managing vehicle fleets and their service\textsuperscript{27}. The fact that such solutions exist is, however, not as frightening as the possibility of simulating them and applying them in unexpected ways – provided, as the authors of the experiment emphasize, one is equipped with relevant programming knowledge. This situation refers to almost all contemporary cars – those which are equipped with an on-board computer. In addition, Kohno and Savage notice a particular paradox – computers, sensors and intelligent systems were introduced into cars in order to increase safety, however, the producers did not foresee in their projects the possibilities of reversal usage of their systems by hackers\textsuperscript{28}.

This experience demonstrates a perspective typical of the imagination in quantum physics epoch – we are mere data bundles which move among other bundles, the latter sometimes do not react to the former, yet occasionally significantly affect them. However, the data are everywhere and wireless networks offer access to the data, which enables manipulation of their source code. In the context of medical development and popularization of various kinds of prosthe-

\textsuperscript{26} Ibidem, p. 13.
\textsuperscript{27} An example of such systems is the OnStar system (General Motors) which is very popular in the USA. See: A. Maj: \textit{Media w podróży}. Wydawnictwo Naukowe ExMachina, Katowice 2010, pp. 188-190.
\textsuperscript{28} Kohno, Savage, \textit{op. cit.}, p. 1.
ses which are remotely programmed via such networks (in order to minimize the necessity to operate on a patient), the situation may become risky for us.

A similar threat is also associated with all biometric systems. A story of hacking the finger scanner in iPhone 5s is a perfect example here (I mean the Touch ID security system). A group of German hackers from Chaos Computer Club made it in less than 48 hours since the iPhone was launched on the market. Before deconstructing the iPhone 5s users' sense of security, Chaos Computer Club, the largest European group of hackers, became famous for other cyberactivist actions which experimentally prove that insecurity is implicit in biometric systems. It is worth mentioning that the group strongly advise not to use such type of systems either when making payment (fingerprint readers have been available in German supermarkets since 2007) or identifying individuals during border check (biometric data included in passports have been used during airport security checks for a few recent years, e.g. in transatlantic crossings). Hackers attract attention to the vulnerability of the technology in question to malpractices and fraud, and point to the ease to impersonate an individual and personal data thefts which are all possible with the usage of materials available in every household.

All disclosed hacker experiments let us doubt the safety of biometric data protection, however, as some specialists accentuate, the arguments are not new (a similar instance of hacking a fingerprint sensor took place as early as in 2003 although, of course, resolution of the scanned biometric material was much lower). Yet such actions will not delay launching such technological solutions on the market, their popularization is just a matter of time – they obviously have plenty of advantages among which are simplicity and naturalness of interface, ease of use and comfort of making payments resulting from the above, and a


lower level of pattern repeatability in comparison to a four-digit code used as a standard security measure in payment cards. On the other hand, the technology provokes new threats for users (not only those related to silicone casts of found fingerprints but also potential risk of kidnapping and attacks on the integrity of users' bodies – mass culture provides us with plenty of interesting film examples, with transplantation of eyeballs in *Minority report* by Steven Spielberg being in the forefront).

Considering the actual popularization of biometric systems and the increasing cyborgization, a question about new operational conditions of bodies in the ubicomp paradigm appears. On the one hand, the body becomes a scanner (which can be hacked in two ways – as *hardware* (kidnapping of the user) and as *software* (copying fingerprints). On the other hand, it becomes an organism whose technological elements can be hacked by changing the signal, by remote introduction and deactivation of a virus (similarly as in the above mentioned experiment of hacking a car) or modification of operation of a device in such a way that it terrorizes the body of the owner, for instance, by manipulating pacemakers (cardiostimulator), prostheses, defibrillators or cochlear implants in order to make the person they were implanted to feel discomfort due to pain or even life-threatening conditions. It is worth to return to Marc Goodman's suggestion about potential threats of bioattacks on heads of states – though DNA hacking still sounds like science-fiction\(^{33}\), interfering with the signal in a politician's pacemaker seems a threat which is more realistic and imaginable in a technical sense.

**DATA AND CONTROLLERS**

For the authorities, however, the flow of data may mean a different kind of discomfort – not in the sense of a personal threat but a threat to the political *status quo*. It is worth paying attention to the meaning of data flow during, for example, the so called Arab Spring which was often called “Twitter revolution” by

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\(^{33}\) It paradoxically corresponds with the idea of personalized medicine based on an individual's DNA which was presented as the main goal of the DNA-sequencing technology by Craig Venter in 1990 (interestingly, already at that time Venter saw problems not in acquiring information but in changing the vastness of “information into understanding”). See: Kevin Maney, Steve Hamm, Jeffrey M. O’Brien, *Making the World Work Better. The Ideas that Shaped a Century and a Company*. IBM Press, NY et. al. 2011, p. 277.
the media (the term was used for the first time with regard to earlier protests in Iran in 200934). It should be noted that the reduction of months of protests in Arab countries to such a phrase by mainstream journalists is to a large extent the result of the growing tabloidization of the media, and it can simply be misleading or even false35. Statistical data do not confirm strong penetration of the region by social media (e.g. in Tunisia – 1/3 of the society are connected to the Internet, 1/5 use Facebook, moreover, before the revolution there were only two hundred active Twitter users out of less than two thousand registered accounts; in Egypt – 1/4 of the society are connected to the Internet, only 5% use FB; in Yemen – only 10% of the population are connected to the Internet and less than 1% use FB; in Libya – only 6% of the society are connected to the Internet and less than 5% use FB; in Syria – 1/5 of the society are connected to the Internet and less than 1% use FB)36, yet – even if the statistics were different – it would not seem proper to confine the success of social revolutions to the usage of particular social media.

It has to be added that social media (especially Facebook, Twitter and YouTube), as a communication channel, played a certain, mainly psychological and popularizing, role in the above mentioned protests. However, it is misleading to attribute to the media an initiating role, like in the case of the social unrest caused by falsified presidential elections in Iran in 2009 after which a number of protestors were killed. Iranian computer scientists Ketabchi, Asadpour and Tabatabaei in their analysis prove that Twitter was then used as an instrument of reporting the events and sending information abroad, and not as a tool of organizing the events37. Here the basic instruments were amateur videos of the protests which showed ruthlessness of crowd control units and presented posts with film commentaries on a microblog. In the case of the Arab Spring, the role of social media is also overestimated, although various forms of their applica-

37 Ketabchi, Asadpour, Tabatabaei, op. cit., p. 54.
tion in different countries and different technological contexts should be taken into consideration.

Halim Rane and Sumra Salem are right in their analysis of the influence of social media on social movements during the Arab Spring when they emphasize the fact of coexistence of numerous factors which determined the success of the movements in the region. The factors they enumerate are, among others, the ability to attract the attention of world opinion by means of global media and creation of a positive image of the protesting crowd as comprised of the young unemployed, non-Islamists with pro-western attitude, opponents of violence and injustice characteristic of the ruling regimes and individuals who crave for democracy and order. Social media not only provided mainstream media with information on goals and origins of the protests but also built a positive profile of the protesters as not vulnerable to manipulations of the authorities and, in some cases, enabled an intervention of external powers (for instance, involvement of European and American politicians and European military forces, assistance provided by telecommunication companies, i.e. Speak2Twe-et channel provided by Google when social media websites were blocked by governmental forces).

With regard to the social diffusion theory, Rane and Salem demonstrate that social media should be treated as a channel of diffusion of innovation (here: ideas of liberty) and not as innovation itself (medium of revolution). Although this distinction is essential, it was not made by the overthrown regimes which identified spreading of the revolution with social media and tried to block them in the last act of desperation. In Tunisia most of the media were controlled, foreign reporters were not allowed to enter the areas where the protests (described as minor acts of hooliganism and terrorism) took place, all social networks were blocked, except for Facebook which was too popular and contributed to spreading a different image from the one constructed by mainstream

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38 Ibidem, p. 108.

media (it was Facebook where people who took part in the fights with the authorities placed photos, links to films on YouTube and Dailymotion, and commented on the situation on the streets)\textsuperscript{40}. The Egyptian authorities made attempts to block Facebook and Twitter, deactivate SMS services (like earlier in Iran in 2009) and even block the Al-Jazeera television and, eventually, the whole Internet. A similar situation occurred in many countries, censorship concerned not only social networking services but also the very access to the Internet or mobile networks. Of course, it evoked counter-reaction, for instance, like in the case of Iranian bloggers in 2009 - Egyptian and Tunisian bloggers were helped by hackers from abroad who provided proxies and thus enabled alternative connecting to the Internet by means of one's own Internet connection, also smaller (mainly academic) network service providers and foreign ICT companies\textsuperscript{41}. The example of Libya is significant as well – during the fights things smuggled through the Egyptian borders included not only weapon but also, in order to enable the rebels to communicate with the world - SIM cards \textsuperscript{42}.

Musleh's remark on the situation in Egypt seems interesting – he claims that blocking network services by the regime actually contributed to the intensification of the protests: instead of giving virtual support to the rebels by clicking the “like” button on Facebook just before playing Farmville and chatting with friends, plenty of young Egyptians went outside and chose an active form of protest in the streets\textsuperscript{43}. Thus, paradoxically, Mubarak himself led to the destruction of his regime by cutting off data flow via social media and Internet from and to the country (although already in the case of Iranian events in 2009 blocking mobile networks and SMS services made the protesters use social networks and microblogs to spread information abroad which caused international outrage about the authorities’ actions and the attempts to block the Internet pro-

\textsuperscript{40} Ethan Zuckerman: The First Twitter Revolution?, “Foreign Policy”, Jan 14\textsuperscript{th}, 2011. URL: <http://www.foreignpolicy.com/articles/2011/01/14/the_first_twitter_revolution?> (access: Dec 7\textsuperscript{th}, 2013).

\textsuperscript{41} Manuel Castells also provides interesting remarks while writing that the old media were found helpful in the time of crisis – instead of the Internet people began to use fax and home phones (to transfer information and connect to the Internet), and old modems. See: Manuel Castells: Sieci oburzenia i nadziei. Ruchy społeczne w erze Internetu (Networks of Outrage and Hope. Social Movements in the Internet Age). Trans. O. Siara, Wydawnictwo Naukowe PWN, Warszawa 2013, pp. 71-76.

\textsuperscript{42} Rane, Salem, op. cit.

voked a strong response and effective counter-action of the international community of hackers and bloggers). Musleh confirms the observations made by Rane and Salem – that face-to-face communication has its primal meaning in social diffusion (and diffusion of innovations, information and values) and social media may only facilitate it, accelerate its dissemination, enable collecting greater support in a shorter period of time. Twitter, Facebook, YouTube and other social media should be thus perceived as channels of communication and not as triggers of revolution (the latter being rather violence of the police and the acts of self-immolation).

It should be emphasized that the state which is oppressive through developing tendencies to totally control its citizens and, eventually, making the tendencies fully effective, simultaneously provokes an implosion of a system built in such a way and triggers internal resistance – social movements. Some flow of information – even a little data flow – must be present in a society if the system is to work – otherwise disintegration of the system occurs. Of course, even a small data flow can be meaningful and evoke real flood of information which the authorities find undesirable – as in the case of Tunisia, where Facebook served as an instrument to propagate a film presenting self-immolation of the merchant Mohamed Bouazizi; or in Egypt, where a tweet about the murder of Khalid Said committed by the policemen was spread in the blogosphere more than 2 million times and a Facebook page supporting the revolution got over a million and two hundred thousand likes in a very short period of time\textsuperscript{44}, or earlier, in Iran, where a film showing the death of Neda Agha Soltan has been viewed on YouTube by over a million and three hundred thousand people until now (and almost a million seven hundred thousand on the CNN channel on YouTube)\textsuperscript{45}. Moreover, one needs to bear in mind that such actions in social networks allow users to understand their power (individualists turn into a community which then turns into a crowd in the street) thanks to automatic counters embedded in the tools. The sense of power and awareness of sharing particular negative emotions by the society actually lead to manifestation of discontent. Manuel Castells attracts

\textsuperscript{44} Rane, Salem, \textit{op. cit.}, p. 104.

\textsuperscript{45} See: Neda Agha Soltan, killed 30.06.2009, Presidential Election Protest, Tehran, Iran [video by Ali Jahani]. YouTube. URL: \url{<http://www.youtube.com/watch?v=76W-0GVjNEc&bpctr=1386722778>} (access: Dec 10\textsuperscript{th}, 2013), \textit{Her Name Was Neda} [video by CNN]. YouTube. URL: \url{<http://www.youtube.com/watch?v=b5KBrszlOxs>} (access: Dec 10\textsuperscript{th}, 2013).
attention to the fact that the most important factor resulting in each revolution (also the “Internet” revolution) is a crisis which prevents people from living a normal everyday existence\textsuperscript{46}.

On the other hand, reactions of the authorities in the discussed countries make it hard to believe in optimistic visions by Michael Anti who claims that even oppressive states like China, with the whole apparatus of censorship and control, evolve being influenced by new media – and especially by social energy concentrated around microblogs (such as Weibo – the Chinese counterfeit of Twitter). It would be difficult not to appreciate this energy, especially in demographic conditions similar to the Chinese ones where there are already over 500 million Internet users, including 300 million microbloggers, and Yao Chen, a microblog star, is able to attract 21.6 million fans\textsuperscript{47}. However, a question should be asked about the possibility of using such energy in a different way – in accordance with the policy of the authorities. Networking tools may generate Internet users’ creative and critical activities on the one hand, on the other hand, however, they rather promote entertainment and social pseudo-activity similar to watching TV (it is disputable whether clicking the “like” button amounts to a political activity), they are new “soma” which Postman, following Huxley, wrote about a long time ago.

Anti may be right and after some time new media will become the reason for social and political change. They will burst the censorship “from within”, or rather “from the bottom”. Nevertheless, for the time being figures such as Yao Chen can thought of as new celebrities or gatekeepers who manage emotions of crowds by means of new instruments being a kind of a safety valve or even an opiate. Eryk Mistewicz would have probably noticed here another dimension of narrative marketing\textsuperscript{48} - bloggers (netocrats - referring to Bard and Söderqvist terminology) consciously or unconsciously create narratives which are supposed to be liked, and to channel emotions of cyber-proles (consumtariat) in a

\textsuperscript{46} Castells, op. cit., p. 209.


way which is safe for the authorities.

Simultaneously, instances of an inverted trend, “topdown” ceasing, censuring and controlling of data flow may be observed – not only in China but also in Europe or in the USA (I refer to the attempts to introduce legal bills such as PIPA, SOPA, ACTA or eavesdropping and tracking systems like ECHELON or PRISM). The state acts as directly oppressive – being a censor, or indirectly oppressive – being an invigilator. However, data flow is always analyzed and citizens are monitored. The state wants to know what citizens do and think. Monitoring is conducted with a view to welfare and social safety of citizens. Therefore, it is Manuel Castells rather than Michael Anti who is right in his assessment of the actions of Chinese authorities towards the Internet. Writing on the Egyptian revolution, Castells refers to the example of China:

“Actually the revolutionary potential of the Internet can be stifled only by means of constant control and surveillance – such a strategy was chosen in China. When a social movement transgresses a particular scale and influence threshold, turning off the Internet ceases to be possible and effective. In the Internet age tyrants will have to take into consideration the fact that people have a possibility to communicate autonomously. Without a permanent blockade or immediate mechanisms of monitoring the Internet similar to the solutions used in China stopping a social movement when it has already gone beyond the space of transmission and begun to act in the space of places is impossible because too many other communication networks with multimodal forms have been created.”

6. DATA AND COLLECTORS

The data are collected on a massive scale not only by the state and its apparatus but also by commercial subjects providing telecommunication services – however, always with the aim to control and track, or at least to have expertise and technology which enables to do that. The history of the AOL data base may provide an interesting context for contemporary (already improved) methods of

\[49\] Castells, *op. cit.*, pp. 75-76.
acquiring and collecting (and extracting) information. In 2006, one of the employers of AOL Research published a fragment of the data base on the Internet (in connection with making a tool to analyze and sort large data sets available to IT specialists). The fragment was comprised of 2 gigabytes of information, that is about 20 million questions of 657 thousand users of the AOL search engine\(^50\). The base did not include data which could possibly enable to identify users or, even more so, personal data. The results which were soon published by data analysts were scary for most of the Internet users. Search queries were absolutely enough to get to know, step-by-step, problems of an individual and, eventually, to identify a particular person. IT specialists, and subsequently New York Times journalists, tracked Thelma Arnold on the basis of the following queries: “cramped fingers”, “single man aged 60 or older”, “dog pees on everything”, “the best time to go to Italy”, “tea for health” and (which was for her location and identification) “architect of green areas in Lilburn, GA” as well as “Arnold” together with different names (a phrase written to search for relatives)\(^51\). The browser history was enough for the specialists to track Thelma Arnold in no time. Today, thanks to social networking websites where users register by giving their real data, the task is much easier – it is sufficient to have access to the data base or hack into it.

In case of frequent attacks and massive thefts of data (amounting to, for example, a million or 2 million accounts)\(^52\) from Facebook or Twitter there are no doubts that control over data has become a matter of great sensitivity. It is worth to mention that one of the biggest collectors of data – Google – has been storing data which come from cookies and whose activity was assumed for 32 years (until 2038)\(^53\). It was only after the intervention of the European Union representatives in 2007 that this period of time was reduced to two years (provided the user does not visit a given page again – otherwise the period starts to be calculated from the time of the last visit, etc.). Fighting tooth and nail in its interest connected with data collection and retention with members of the EU

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\(^{51}\) Ibidem, pp. 110-111.


\(^{53}\) Ibidem, p. 119.
Article 29 Data Protection Working Party, Google simultaneously engage in high-profile actions in favor of protecting Internet freedom, as in the case of Arab revolutions. Timothy Bradshaw from *Financial Times* writes, for example, that during the World Economic Forum in Davos Google representative, David Drummond, stated: “The Internet has been one of the greatest innovations of our lifetime because of the access to information it gives people around the world. We believe that access is a fundamental right, and it’s very sad if it’s denied to citizens of Egypt or any country”54. Similar claims are voiced by Biz Stone, a representative and co-founder of Twitter („open exchange of information is very important and can have a positive impact on the world”), who emphasizes the concern for freedom of speech and users' data protection55. Marc Zuckerberg does not avoid making similar statements either. However, he depicts his world as a cheerful network of friends and opts for complete openness of users' data at the same time keenly protecting his own privacy56. All of these make the skit by an American group The Onion57 sound horrifyingly serious and extremely probable – Facebook really could be a secret CIA program and Marc Zuckerberg could be a super secret agent, the originator of the best CIA spyware of all time.

It seems that the tendencies of the growing control over data and, at the same time, a kind of surveillance of data bases increasingly undermine the trust which citizens put in the authorities, business and technology providers. In view of mounting social crises it is crucial who we entrust our data to (not only personal data) and what happens to them. The case of Iran, where identified bloggers from the 2009 protests were sent to prison or disappeared without a trace, shows how dangerous identifying users' present and past activities can be for them in the future. Content of the AOL data base also proves that data control is not completely pointless – for the police it is undoubtedly an interesting source of

54 Bradshaw, op. cit.
55 Ibidem.
57 The satire is about a CIA representative who appears on a false TV program and presents an innovative tool called Facebook which was created in order to reduce costs of CIA actions in the time. See: Chris Fletcher: *Computers, Social Science and the Cambridge Project*. In: Cyberculture Now. Social and Communication Behaviours on the Web. A. Maj, ed. Inter-Disciplinary Press, Oxford 2013, p. 128. See also the source material [video]: CIA “Facebook” Program Dramatically Cut Agency’s Costs, The Onion, <http://www.theonion.com/video/cia-facebook-program-dramatically-cut-agencies-costs,19753/> (access: Dec 6th, 2013).
knowledge about which bad thoughts citizens have and which bad things they do\textsuperscript{58}.

**DATA AND DESIGNERS**

It seems that in the political and technological reality of ubicomp average users of new media, who consciously and unconsciously produce terabytes of data about themselves, are doomed to failure, loss of liberty, privacy, and sometimes even identity. However, activities of new creative circles, especially designers, cyberartists and hacktivists, give us reasons to believe that the situation is not thoroughly disastrous. The loss of privacy and liberty is obviously a fact, yet citizens are not completely deprived of the instruments of passive and active resistance which may sometimes even deconstruct functioning of the surveillance system.

By means of diverse methods, artists and designers try to draw the attention of the wider public to the importance of data, to political and business discourse which dominates over users’ arguments and promotes attitudes harmful from the point of view of freedom of a conscious media user. Thus, new media art (especially cyberactivism) and socially responsible design (especially infographics) have become tools for building and strengthening social resistance to ubiquitous surveillance systems, especially the ubicomp technology\textsuperscript{59}. Socially involved interactive art presents still new ways of subversive usage of new media. Whereas infographics has become one of the fields of journalism which completely changes its status as so far it had been situated only within graphic design, that is between art and industrial design, especially advertising\textsuperscript{60}. By means of visual methods designers allow the recipients of their works

\textsuperscript{58} Reppesgaard in an anecdotal tone quotes entries actually proving a will to commit a crime such as queries on child pornography or methods of killing a spouse, but also queries which provide significant and embarrassing knowledge about a user which can be used against her/him, e.g. queries concerning suspicions of being cheated by a partner or suspicions of being affected by AIDS. Reppesgaard, *op. cit.*, p. 111.

\textsuperscript{59} The problem is thematized in my forthcoming essay: A. Maj: *Cyberbricoleurs: new media art and infographics as an instrument of resistance against control of intelligent systems*.

\textsuperscript{60} Interesting work on relations between infographics, journalism and newsgames was written by Ian Bogost, Simon Ferrari, Bobby Schweizer: *Gry informacyjne. Dziennikarstwo epoki cyfrowej*. Wyd. UJ, Kraków 2012, pp. 39-68. However, it is worth mentioning that infographics, despite its significance, should not be overestimated. As Bergström writes, „press graphics never fulfills the function of an independent medium”, it always co-exists and co-creates meanings together with texts and photographs. Bo Bergström: *Komunikacja wizualna*. Wyd. Naukowe PWN, Warszawa 2009, p. 228.
to understand the essence of abstract rows of numbers from spreadsheets – records from data bases. Design discovers the sense of information, it is a semiotic process (of finding and creating meanings). Whereas visualization is a form of translating language of mathematics and computer science into language of images.

In conclusion it is worth mentioning the words by Edward Tufte, the precursor of statistical information visualization, who has for many years explained the transition from seeing to showing, and ways of translating intellectual work connected with an analysis of data meaning into a visual form which enables the final recipient to understand an issue. He explicitly states that what appears as chaos and loss does not stem out of the nature of data but from the deficiencies of design. “There is no such thing as information overload. There is only bad design.” In other words – good management of data makes them understandable. Bearing this in mind it can be stated that data are meaningful on condition that there exists a competent recipient in the communication process. An intelligent system which collects data is not enough, what is needed is an intelligent interpreter.

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INTRODUCTION

Game is a concept which has a powerful impact on every person. The game phenomenon occurs in various dimensions of human life. Most of our everyday activities consist in playing games. We cannot escape them. One of the reasons for that is that they lie at the heart of language use.

In order to communicate successfully, in our conversations, we keep saying: “What do you mean?” “Can you understand me?” “You know what I mean…” Mutual understanding of interlocutors seems to be crucial in achieving linguistic cooperation. However, the ideas of understanding and meaning remain inextricably linked not only in our verbal communication.

MODERN SEMANTICS

The concept of meaning provides the central topic of study in semantics. Semantics is a branch of semiotics and the study of “the relation of signs to the objects to which the signs are applicable” (Morris 1938:6). This definition was adopted by the philosopher Rudolf Carnap who explained: “If we abstract from the user of the language and analyze only the expressions and their designate, we are in the field of semantics” (Carnap 1942:9). Being a constitutive part of language, meaning encompasses its numerous aspects. This fact is the reason why linguists, philosophers, anthropologists, psychologists, and other scholars concerned with investigating meaning have expressed different theories about the nature of meaning. Suffice it to mention: the referential, ideational, behavioral theories of meaning, the meaning as use theory, the truth-conditions theory of meaning, meaning in terms of necessity, meaning in terms of analyticity, the theory of meaning for non-assertive sentences. Consequently, there are various approaches to the study of meaning. Individual philosophers, linguists, and lo-
gicians distinguish various types of semantics at present. Within these divergent typologies are the following: historical semantics, interpretative semantics, and generative semantics, behaviorist, logical, formal, structural, model-theoretic, possible-world and truth-conditional semantics, Boolean, situation, and literary semantics.

While dealing with the problem of meaning we cannot overlook the strategic paradigm for language theory propounded by Jaakko Hintikka, where language is seen as a goal-directed process and is studied by means of strategic rules. One of the most recent branches of semantics is the one presented by Jaakko Hintikka and Eric Stenius in the late 1960’s and early 1970’s, called game-theoretical semantics, whose main concept is the idea of playing games while using natural language. A basic term in game-theoretical semantics is that of semantical game. This concept was introduced into semantic studies by Jaakko Hintikka, the Finnish logician, who explained the term in his article entitled “Language-Games” (1976). According to him, semantical games are the binding and tying relationships between linguistic structures and the aspect of the world that they refer to, links between a part of language and that aspect of the world which they convey information about.

GAME-THEORETICAL APPROACH TO NATURAL LANGUAGE

The person instantly associated with describing the phenomenon of language-games is Ludwig Wittgenstein. This Austrian philosopher (1889 – 1951) was the originator of this subject in semantic studies. The classical definition of language-games proposed by Wittgenstein is included in his Philosophical Investigations (1945/53), where the language-game is defined, in a very concise manner, as “the whole, consisting of language and the action in which it is woven” (Wittgenstein 1945/53:7). Thus, a simple interaction that consists in showing a thing by one person to another person who responds by naming the thing is henceforth treated as a language-game. Similarly, the process of learning a native language by toddlers when they repeat the expression they are taught is another example of language-game.

One of the main interests of Wittgenstein was the relationship between language
and reality. He observed that this kind of relationship was reflected and had its origin in certain rule-governed human activities. Thus, language-games is a general term, invented by Wittgenstein and later adopted and elaborated by Stenius and Hintikka, which covers all rule-governed human activities accompanied by the linguistic component.

At this point of our discussion one might, however, vainly expect a presentation of a coherent theory of language-games. The theory of language-games as such does not exist at all. Moreover, it is hardly possible to formulate because it can never be viewed in abstraction from language. This seemingly paradoxical situation follows from Wittgenstein’s observation that in formulating any theory (as well as any judgment, opinion, etc.) we are confined to our language. The fact that it is impossible to express a theory of language-games without actually using language and, consequently, playing a game is the corollary of Wittgenstein’s famous statement: “The limits of my language mean the limits of my world” (Wittgenstein 1922: 5,6).

Semantical games being closely related to language-games, in fact with their status equal to that of language-games, are said to be games designed as “the only explicitly defined games (…) in the sense of Wittgenstein’s language-games” (Hintikka 1974: 52). Hence the Wittgensteiniann definition of semantical games proposed by Hintikka means their leveling with language-games. In contrast to Wittgenstein’s apothegm about the limitations – imposed by language – on human verbal expressibility, Hintikka claims that the idea of language-games “apparently provides us with a method of overcoming the limitations of our own language” (Hintikka 1976: 20). This claim is prompted by his observation that in order to account for “a language with a semantics different from our own” (Hintikka 1976: 21) what only needs to be done is to specify the rules that govern the use of that language, that is the set of language-games that can be played by means of this language, and their rules.

Having earlier admitted the impossibility of an explicit theory of language-games, Hintikka modifies Wittgenstein’s approach to language with the argument that a specification of relevant language-games that may be presented in various “forms of non-verbal inculeation” (Hintikka 1976: 21) provides a method of avoiding “the difficulties that arise when the semantics of one lan-
guage is explained in another one” (Hintikka 1976: 21). Additionally, this conclusion is considered by Hintikka to be a direct implication of Wittgenstein’s assumption about language-games, and – moreover – a statement that refutes other linguists’ (Gödel’s, Tarski’s) conclusive remark that “the semantics of a language can be specified only in a richer language” (Hintikka 1976:21), which means a language of a higher order, namely a metalanguage.

Wittgenstein’s main concern, meaning, was analyzed by him in terms of the use of language. This central theme of Wittgenstein’s later philosophy, commonly called the use theory of language, expounded in Philosophical Investigations (1945/53), has become Hintikka’s source of inspiration. He fully supports Wittgenstein’s claim that the use of language, that is the use of linguistic expressions in the context of some non-linguistic activities, which consist in playing language-games, establishes the link between language and reality. In other words, he holds the view that the primary function of particular human activities is to instantiate the relevant language-games, that is to provide a connection between words and what they designate in a particular context of situation. Hintikka characterizes the link between language and reality as not natural in the sense that it is not enough to merely scrutinize the expressions of the language and observe this section of the world that they convey information about in order to specify particular relationships between language and reality. It is language-games that serve this fasciation function best.

In keeping with what has been stated, one major distinction should be introduced to prevent confusion in terminology and misinterpretation of the basic concepts. Namely, it is important to distinguish language-games and linguistic games and treat them separately. It is characteristic of the former that they do not occur in language, which is typical for linguistic games; instead they are performed by means of language (cf. Hintikka 1976: 12).

To rephrase that claim, one could say that language-games are the notion operative in the philosophy of language, whose scope and subject is so succinctly revealed in Searle’s Speech Acts (1969): “it is the attempt to give philosophically illuminating descriptions of certain general features of language, such as reference, truth, meaning, and necessity; and it is concerned only incidentally with particular elements in a particular language” (Searle 1969:4). Linguistic
games, in turn, seem to be used in the field of *linguistic philosophy*, which should be perceived as: “the attempt to solve particular philosophical problems by attending to the ordinary use of particular words or other elements in a particular language” (Searle 1969:4). It follows, then, that all kinds of word-play (for example, punning) and other literary (rhetorical, stylistic) devices belong to the realm of linguistic games, whereas language-games operate on the more general level of the use of language, the one that directly relates language to reality. The proposition seems worth considering, especially if the “use as usage” fallacy – so frequently committed – is taken into account.

The above mentioned fallacy is attributable to a common tendency nowadays to use the notions of *use* and *usage* interchangeably. Hintikka objects to the faulty substitution. He argues that Wittgenstein’s observation that the meaning of an expression is equal to its use should not be confused with – and distorted to – the oversimplification that “the meaning is somehow determined by *usage*, that is by the linguistic use of the expression in question” (cf. Hintikka 1978: 12). Objecting to this assumption, Hintikka once again emphasizes one of Wittgenstein’s central remarks that words and language expressions ultimately derive their meaning from their “use in the context of, and as a tool for, certain non-linguistic activities” (Hintikka 1976: 12).

**ORDINARY GAMES AND LANGUAGE GAMES**

The fact that a full and precise definition of game is unattainable is proved by many attempts that – in the long run – turn out to be insufficient. The formal quasi-definitions that have been invented so far are to a large extent incomplete and deficient, and they provide a scanty meaning of game. One of fairly general, though quite comprehensive, definitions of game reads that a game is “a social activity typically regulated by a set of fixed rules” (Chrzanowska 1994: 497). At first glance this definition seems to apply to all games, but it ultimately fails to serve as a reliable universal criterion for game identification since it lays stress just on two aspects of game at the expense of its crucial factors. Being a social activity where the necessary and constitutive condition is the existence of rules is certainly too broad a definition of game. Besides, it does not help to distinguish games from rituals, for example.
No definition of game can be universally applicable; every definition is bound to be somehow restricted in sense and narrow in scope. It seems that it is impossible to embrace all features and significant aspects of various games in a single definition that would apply to any game. This hypothesis may easily be verified by checking up the term *game* in any dictionary. Thanks to a great number of definitions under the same entry, one realizes how broad the concept of game really is. This inconvenience and, at the same time, an important feature of game is caused by a divergent and multi-functional character of this concept. One may only risk a definition that is partially applicable, that is, which applies to certain games only — with respect to their common features. It is also possible to introduce classifications of games that would be based on some of their selected characteristics.

For the sake of linguistic analysis we can, for instance, introduce a distinction between ordinary games and language-games. Apart from ordinary games (such as chess, card games, basketball, etc.), people simultaneously and constantly engage in playing language-games. Still, the above mentioned trait of inexplicability applies to this kind of games as well.

Language-games are impossible to define not only in language. Hintikka advocates the inexplicability of language-games and refutes all attempts ever endeavored to elucidate them in terms of players’ intentions. His main argument against this tendency is his claim that intention is an integral part of each language-game as it already presupposes the language-game. He briefly concludes: “Purposeful uttering of sentences already is a language-game” (Hintikka 1976: 13). Thus, the inexplicability – the inscrutability and ineffability in Hintikka’s parlance – of language-games becomes a crucial element in the description of all language-games.

At a closer look at various ordinary games, it becomes obvious that there are games to win (or lose), yet not all of them are games of skill (lotteries, dice, etc.). By way of analogy, not all games of skill are to win (cat’s cradle, for instance). This is just one example of many analogies that could be enumerated endlessly. In short, every game resembles some other games with regard to certain features. They may be similar in their function, equipment, the involvement and number of players, the game purpose, etc.
Wittgenstein’s observation that all games are related in one way or another and together they belong to one huge family, led him to the conclusion that games are connected through “a complicated network of similarities” called family resemblance (Wittgenstein 1945/53:32). Various overlapping properties and correspondences holding among all sorts of game constitute, therefore, a characteristic feature of the infinite set of games, including language-games. Another important and universal feature of games – naturally resulting from the previous one – is their fuzziness, overlapping in scope and the imperceptibility of their borders, also called “blurred edges” (Chrzanowska 1994: 502).

One of the distinctive features of language-games, extended to other kinds of game, was pointed out by Wittgenstein: “The game is supposed to be defined by the rules” (Wittgenstein 1945/53: 150). If we choose an anthropological theory of play, a good example of which is the one presented by Johan Huizinga in Homo Ludens. Play as the Source of Culture (1938), the status of rules is likewise primary. On this theory the game is perceived in terms of contest, and rules guarantee the winner’s (and the loser’s) recognition. The basic asset of rules in all games is that they “delimit the games from the outside reality and become the measure of their intrinsic value” (Chrzanowska 1994: 498). Violating fixed rules is undesirable, and if the player violates any of the rules on purpose – especially when playing an ordinary game – he/she is bound to be punished for deception and he/she may even be excluded from the game.

But even if the existence of rules is taken for granted in every game and the consequences of flouting the rules are accepted, there remains the question of what constitutes the game proper and distinguishes it from other rule-governed human activities. The problem is, in fact, quite perplexing but not very complicated.

Seeking a solution, we may simply try to juxtapose Huizinga’s theory, according to which play consists in obeying game rules, with another one. If this competing theory happens to be Freud’s theory of play, we shall achieve a unique and idiosyncratic feature of the phenomenon in question. This feature derives directly from the fact that “for Huizinga play depends on sticking to rules, whereas for Freud it depends on abandoning them” (Lerner 1988: 190). This prima facie contradiction is crucial to the game. It is also essential to notice that
Huizinga’s and Freud’s observations refer to different rules, however strictly they all are connected with a game. In other words, both Huizinga and Freud express their views on play with respect to rules: Huizinga obviously concerned with game rules exclusively, whereas Freud apparently having in mind rules of social behavior typically established by everyday human relations. The above quoted statement thus becomes viable when we realize the very shift in putting emphasis on different sorts of rules, depending on the theory of play mechanism that we adopt. And, finally, it is the paradox of play - obeying and breaking rules – that decides about the game identity and the playful aspect of every game, rather than the mere existence of rules, which is – among other things – equally typical for work, for instance.

Keeping in mind the distinction between ordinary games and language-games and the principle of punishing the player who violates the rules of a game, it should also be noted that in the case of ordinary games most of their conventions are arbitrary and rigid in nature, while rules governing the use of language tend to be more flexible. “The notion of ‘rules of the game’ is, however, much more problematic in the case of language than in that of ordinary games. While ordinary games are usually based upon conventions, agreed upon in advance, it is not equally clear what is meant by ‘conventional rules of language’” (Føllesdal 1967: 277). This means that it is not necessary for the rules of language to be strictly obeyed by the players since the game will regardless be kept proceeding.

The rules of every game – or rather their actual application – are closely related to its purpose. Wittgenstein declared: “I am inclined to distinguish between the essential and the inessential in a game. The game has not only rules but also a point” (Wittgenstein 1945/53: 564). Thus, both rules and purpose are intrinsic and non-accidental traits of every game. In contrast to the proceeding remark, Lerner (1988) maintains that apart from rules there is one more essential element in every game, but it is not its purpose. Following Huizinga’s theory of play, Lerner claims that play serves no useful or necessary function and neither does the game. Thus, in Lerner’s view the game is always useless in the sense that “its purpose is detached from social usefulness” (Lerner 1988: 189). What stands against accepting this claim is a much more complicated nature of game than it was assumed by Huizinga and Lerner. If we take into consideration sev-
eral more aspects of game that are to be described further on, the game useless-
ness and the detachment of its purpose will be totally denied.

When comparing rules of ordinary games and those of language, it is clearly
noticeable that what makes them similar is that “they serve no purpose external
to the system to which they belong” (Chrzanowska 1994: 508). Yet the result
of ordinary games is most often predictable, especially with the help of an enu-
meration of all game developments. When using natural language, however, the
outcome of playing language-games is quite different since language – owing
to its rules – escapes all strict regularities of logical calculi.

A move in language-games is an act of generating an utterance in accordance
with the syntactic and semantic rules of a language (Fǿllesdal 1967:278). There
is, however, a caveat to this claim provided by Hintikka, who, in fact, disagrees
with that definition and treats it as a fallacy. In his polemical article, “Language-
Games” (1976), Hintikka shows that an utterance can just describe a move, not
necessarily being a move itself (Hintikka 1976: 17). He also restricts the def-
nition of a move by excluding a number of indicative sentences – of the type
‘Bill promised Sue to marry her’ – that were hitherto considered to be moves in
language-games. His refinement of formulating the relation holding between
utterances and moves boils down to the statement that “an utterance of an indi-
cative sentence is not in general itself a move in those language-games that
serve to give a meaning to its several constituent words and thereby to the whole
sentence” (Hintikka 1976: 18).

With deliberate violating or – otherwise – complying to certain rules of a game,
the player adopts a particular strategy. The notion of strategy is a keyword in
the study of games. It consists in choosing and performing certain moves. The
player’s choice of a particular strategy, in turn, depends on what his/her purpose
is. Therefore, we can distinguish a specific type of rules, strategic rules, defined
in one of rule classifications as those that “tell which moves are preferable”
(Fǿllesdal 1967: 278). Performing as well as refraining from making certain
moves helps the player to achieve his/her goal. Knowing the player’s strategy
enables us to predict the outcome of a given game, although it is often the case
that players are allowed to alter their strategy without thereby ceasing to play
the game. Consequently, the game may develop in various directions. There
may be an infinite number of possible realizations, with a constant number of rules – fixed beforehand – being preserved.

Due to various strategies adopted and rejected in the course of a game by its players, every game contains the element of contingency. A sheer specification of rules in many cases is not sufficient to foresee the result of the game. The game matrix, an illustration of the game development, is not applicable to all games either, especially to language with its flexibility of rules that allows for altering strategies by players. Thus, the interplay of strictly established necessary rules and the unpredictability of the game’s outcome is the core of language-games and many ordinary games (for example, the game of chess).

GAME TAXONOMY

Games can be classified with respect to their numerous aspects. It is interesting, for instance, to group games on the level of their actualization and the effects achieved through playing games. Such a classification will be based on a rough synthesis of the character and function of various games occurring in different areas of human life. The purpose and the way in which the player intends to obtain it are two factors that decide about the character of the game that the player chooses to play. What follows directly from this assumption is that the character and function of games can only be scrutinized with reference to the player’s motives and intentions to participate in the game. Therefore, the player’s purpose is equally the issue of paramount importance in making this kind of division.

A clash of interests that sometimes appears between players (in all kinds of competitions, the game of chess, etc.) brings about the competitive character of some games. The general principle that conflict always implies rivalry is prominent in the mathematical theory of games, originated by Johan von Neumann, where it is regarded as a determinant and a major factor in the behavior of individual players. The most practical contribution of the theory to the study of games seems to be the game matrix, also called the tree of decisions, that illustrates all possible decisions or strategies of all partners involved. This device enables us to specify the optimal strategy that should be adopted for a particular
situation in the game and helps to select the best move possible at a particular stage of the development of the game.

The major drawback of the game matrix, however, is its limited usefulness. It turns out that even though all games (including games of luck) are theoretically subject to the research carried out in the mathematical theory of games, their ultimate result remains speculative and unsettled. Practically, it is possible to enumerate the player’s moves and list all the potentially employed strategies but only in the case of a limited number of – not very complex – games. Language-games seem to escape the method of the game matrix as the flexibility of their rules usually prevents any reliable logical predictions as to the development of a discourse.

In contrast to the previous aspect of games stands their co-operative function with the typical lack of conflict among the players and the desire to reach the same objective. As far as the number of participants is concerned, one condition must be met in games where co-operative or competitive (or both) elements appear: such games usually involve teams of players or at least a couple of game participants. This is so because “Games are a form of communication contrived to allow ‘simultaneous participation of many people in some significant pattern of their own corporate lives (...) play implies interplay. There must be give and take, or dialogue, as between two or more persons or groups’” (Styan 1975: 235).

In the domain of language, dialogues and conversations can be treated as counterparts of two-partner and team games, respectively. If we accept the communicative aspect of language as its dominant and prevalent function, the co-operative quality is thereby recognized as the main attribute of language. To sum it up, “The use of language has, no doubt, much in common with the playing of a game. In both cases certain moves are permitted, others forbidden, etc., and in games, too, there is an element of communication” (Fõllesdal 1967: 277).

With the deterministic view of human existence taken into account, there emerges another exegesis of the game phenomenon, the one propounded by Eigen and Winkler, called *the cosmic approach to games*. In the light of this theory everybody participates in the game of living, whose result remains unknown till the end of the game (that is, of one’s life). Whatever strategy is
adopted by the players, they will always be doomed to the constant pervasiveness of biological processes shaping the world. People willingly indulge in joyful activities, mostly in search of release from mundane chores. Those exciting occupations are, nevertheless, regulated by certain rules that are supposed to be obeyed by all the players and thanks to which the gamesome world becomes delimited from the surrounding reality. The constitutive element of the game, rules, is retained. The position of the player is, however, in opposition to the player’s status described in the cosmic theory of games, where the game of life is imposed on every single individual. Incidentally, the escapist theory of games, presently sketched, perceives the person as the inventor of games and their rules, with the social character of games fully admitted.

Once we apply the cosmic theory of games to the linguistic domain of human life, or language treated as a huge game, the correspondence of this claim to Wittgenstein’s “form of life” becomes obvious. Wittgenstein analogically observed the subordination of speaking in a language to engaging in a non-linguistic activity, which observation served him to explain the role of the term language-game: “here the term language-game is meant to bring into prominence the fact that speaking of language is part of an activity, or of a form of life” (Wittgenstein 1945/53:23). This leads to the conclusion that, though language is not obviously involved in extra-linguistic activities, it underlies all rule-governed human occupations, which, in turn, seems to corroborate the primacy of language in human life.

The escapist aspect of playing games – as applied to human artistic creation – can be analyzed in terms of its aesthetic function that allows a language user, especially an artist, to satisfy the need for creating another reality. The process generally consists in playing with the material and form of creation, such as words and the overall structure of discourse – to take an example of literature. This dimension of playing games subsumes all kinds of experimenting with the texture of language. The kind of literature most susceptible to word-plays and other literary techniques seems to poetry. Yet it is not only poetry, or even literature, that abounds in all kinds of linguistic games with their purely aesthetic function. The everyday use of language proves that playing linguistic games – such as riddles, tongue twisters, crosswords, etc. – is a ludic activity par excellence, which directly relates to fulfilling aesthetic needs of language users.
The present classification of games would be gravely defective and impoverished without mentioning cognitive elements in playing games. It is claimed that: “A game is an imitation of life” (Styan 1975: 235). To a certain extent all games are basically rooted in reality and as such cannot be discussed in abstraction from their surroundings, the real world, nor can their function be reduced to enjoyment. It should be remembered that game participants may not only play for pleasure or concentrate on winning alone. Players, undoubtedly, acquire new experience in the course of every game, encounter new situations, and so they enhance their cognition. By no means should the notion of game, then, be constrained merely to amusement and entertainment, however significant these functions may be. In other words, playing games is not only rule-governed but also experience-conditioned human activity that gives shape to the totality of the players’ knowledge.

There is one more reason why people engage in gamesome activities. Playing games is, namely, motivated by the largely unconscious human need to maintain interpersonal relationships. This inner strive to play games was analyzed thoroughly within a branch of psychology called Transactional Analysis by Eric Berne, the psychologist and the author of Games People Play (1964).

The most convincing argument in postulating the existence of games as “options for structuring time” (Berne 1964: 18) distinct and independent of other activities – such as rituals, pastimes, etc. – seems to be the assumption that both games and intimacy are the most gratifying forms of social contact. Thus games are perceived as substitutes for real intimacy. A most plausible presentation of game motivation can be found in the book by Berne: “Because there is so little opportunity for intimacy in daily life, and because some forms of intimacy (especially if intense) are psychologically impossible for most people, the bulk of the time in serious social life is taken up with playing games” (Berne 1964: 61).

Theoretical game analysis is a scientific discipline that aims to “abstract and generalize the characteristics of various games, so that they can be recognized independently of their momentary verbal [sic!] content and their cultural matrix” (Berne 1964: 52). In spite of all the usefulness and profitability of this analysis, there would not be, however, a psychological definition of game without practical and empirical dealing with specific cases of playing games. The
definition says: “A game is an ongoing series of complementary ulterior transactions progressing to a well-defined, predictable outcome” (Berne 1964: 48), where a transaction, the unit of social intercourse, is constituted by an exchange of strokes, the fundamental units of social action that generally denote intimate physical contact, and which term is also employed to indicate “any act implying recognition of another’s presence” (Berne 1964: 15).

Another, less technical and more descriptive definition reveals the universal function and motivation of playing games: “On a larger scale, games are integral and dynamic components of the unconscious life-plan, or script, of each individual; they serve to fill in the time while he waits for the final fulfilment, simultaneously advancing the action. Since the last act of a script characteristically calls for either a miracle or a catastrophe, depending on whether the script is constructive or destructive, the corresponding games are accordingly either constructive or destructive” (Berne 1964: 62).

Playing games as an individual quest for recognition is not identified with any static attitude, but because of its dynamic qualities mentioned above it is rather characterized in terms of process. As to the character of particular games, “to say that the bulk of social activity consist of playing games does not necessarily mean that it is mostly ‘fun’ or that the parties are not seriously engaged in the relationship. On the other hand, ‘playing’ football and other athletic ‘games’ may not be fun at all, and the players may be intensely grim; and such games share with gambling and other forms of ‘play’ the potentiality for being very serious indeed, sometimes fatal” (Berne 1964: 17-18).

Berne (1964: 48) puts emphasis on the fact that ”Every game (…) is basically dishonest, and the outcome has a dramatic, as distinct from merely exciting, quality”. He also uses the term maneuvers to stress the insincere quality of moves performed in each game by its players. This kind of behavior is clearly reflected in the use of language. An application of this theory to linguistic human behavior would certainly lead us to one of the distinctive features of human language, namely to prevarication: “the possibility of using a semiotic system to deceive or misinform” (Lyons 1977: 83). Analyzing various ways of deceiving such as vagueness, irony, ambiguity, equivocations, half-truths, and finally straightforward lies, would mainly contribute to psychological and pragmatic
studies. The more so “prevarication should not be regarded as a property of the semiotic system as such, but as a feature of the behavior and intentions of those using the system” (Lyons 1977: 84).

Like in the case of previous theories of games, it is taken for granted that: “The essential characteristic of human play is not that the emotions are spurious, but that they are regulated” (Berne 1964: 18). The purposefulness of playing games is the most significant feature in the above-profiled theory, in which the purpose of a game is its culmination, also called payoff. Generally speaking, the goal of every player is to obtain as many satisfactions and advantages as possible from his transactions with other players. It is also worth noticing that mathematical game analysis takes into account completely rational players, whereas transactional game analysis focuses on “un-rational, or even irrational, hence more real” (Berne 1964: 172) players.

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Stanislaw Rosiek in the introduction to the anthology „Dimensions of Death” characterizes the modern person’s attitude towards death in the following way: “Enough has been said and written about death. One would require a really good reason to add any sentences of one’s own. Words about death have lost their value. This is particularly visible when they attempt to assume a loftier tone. It is not clear when has this way of speaking fallen apart. The situation is probably similar with philosophical discussions of this subject. As a result, death as a general category has disappeared, just as it had earlier disappeared as a personification. There is no death.” [Rosiek 2002, p. 5]

At the same time, however, in the network environment, and in the Internet press portals in particular, one can observe a phenomenon of a certain fascination with death. A good news article is intended to awake its readers’ interest. A death of a famous person, an accident victim are perfect subjects for this kind of news. On the other hand, the Web is also a place where we can find evidence of an authentic experiencing of death (for instance blogs of people whose close ones are dying, or even of those who are dying themselves). This constant communing with death has devalued death as a subject of a profound reflection. It has become a tamed subject and the reflection turned trivial. Death entered popular culture, lost its character, became a subject of a game: movies about death, clips, commercials, games based on killing, and, what is particularly important, on countless deaths of one’s own virtual avatar, all these phenomena reduced death to an insignificant episode. The end of one life means the beginning of another. Killing and dying remain without consequences. The scale of this phenomenon is illustrated by the number of google search results for the word death. In Polish 40 500 000, German 12 200 000, French 246 000 000, and in English 1 800 000 000!

The issues that are of interest to us acquire a new dimension in the context of an appearance of the new new media, to use a term suggested by Paul Levinson...
These phenomena are also variously known as social media, Web 2.0, screened art. All these names refer to a novel way of participating in culture, which, in contrast with the new media, does not merely mean passive consumption of artifacts (books, films, exhibitions) but implies active participation in the creative process. Levinson states that the new new media have a social character. Examples of behaviour typical to internet societies can be found in such actions as commenting on blogs, editing the Wikipedia, exchanging opinions on Facebook, creating avatars in the Second Life, etc.

In his book [Levinson 2010, p. 11-21], Levinson defines the categories of the new new media, indicating the following:
1. Writing, sound, the audiovisual, photography;
2. Information which is the purpose not the form of these media;
3. Social media (Facebook, My Space, Twitter)
4. Blogs, podcasts, videocasts as forms typical to these media;
5. A connection with the sphere of politics on the one hand, and entertainment on the other;
6. Hardware and software;
7. Control of these media and attempts at their censorship.

One could say that the world of such an open culture is shaped not only by its creators but also by the hitherto recipients, who comment on blogs, establish readership or music canons (by, for instance, constructing their own playlists), participate in installations or various forms of mass events such as a flash mob.

New forms of participation in culture blur the differences between professionals and amateurs (active journalism being a good example). Anyone can become an author. There also appears a series of hazards, relating on the one hand to problems with defining one’s identity, and on the other to attempts at breaching its boundaries by other internet users. These changes, occurring in front of our own eyes, insist that we ask questions about the new necessary competences. The answer can be reduced to one key competence, i.e. experience. Experience acquired during the performance of the new acts, in the submergence into the internet world. This is why a special place in this process is reserved for young people, whose outlook on the world becomes dominant in and through the Internet. We are witnessing the birth of culture of Generation Facebook, as Guy
Sorman calls it. It is precisely Facebook which seems to be a community of particular importance. A social network established in 2004, whose registered users can create groups, share messages and photos and use applications that are the property of Facebook, Inc. in Palo Alto. In 2011 the number of users over the whole world exceeded 800 mln, and every month over 1 billion photos and 10 mln films are uploaded.

* 

In one of his most famous poems, Adam Mickiewicz wrote:

*When my corpse sits amongst you*

*It looks into your eyes and speaks loudly*

*Gdy tu mój trup w pośrodku was zasiada,*

*W oczy zagląda wam i głośno gada.*

When half-jokingly taken out of their context, these words may be regarded as a prophetic foreshadowing of the phenomenon that we are discussing today, i.e. the presence of death in a social network. Every internet user may register any profile on Facebook. Many of them concern death and they are of varied nature.

We may find profiles concerned with cultural texts (novels, movies), which group fans of these works. Profiles of the movies Death in Venice, Death of Beautiful Deer or the series Prison Break (In polish translated as Sentenced to Death) serve as good examples. In recent times we are flooded with profiles such as Death of Hanka Mostowiak (a character from a TV series L stands for Love (M jak Miłość)) or Death of Rysiek from Klan. The other kind of profiles is constituted by those connected to a real life event (death in a disco, death of Hitler, Solve the death of Jarosław Zięba) Another group are profiles of postulate character (death to mosquitoes, death to unicorns, death to suckers, death to informers, death to Politics, death to ACTA. We may find on Facebook movies depicting death (eg. They filmed their own death) and profiles of „Sims Social” players (Doom Death).

There are profiles that attract particular attention, those signed by Death. We find several of this kind in the polish Facebook, and equivalents may be found in other languages (English Death, or der Tod.)
Facebook profiles have a distinct structure, composed of several spaces. The basic one is “Newsfeed” (a space for the profile owner’s messages but also for the messages of his friends from the community and for pasting of multimedia material.) Another place is “the Wall” which the profile owner is free to paste upon. Another one is “Events” (a place to organize meetings both in the net and real life). A list of friends is also created, people who can read our messages and have access to what we upload. This access can be limited according to the profile owner’s wishes.

The profile and the messages within are accompanied by an icon „Like” whose clicking is noted next to the message and determines its popularity and the interest in the uploaded material. The most numerous polish fanpages number hundreds of thousands of fans. The biggest one is “demotywatory.pl”, 985 thousands, followed by “Kuba Wojewódzki”, 702 thousands. On the world scale, the numbers grow much larger. In another social network, “the Twitter”, messages of Lady Gaga are followed by 13.5 million readers, Justin Biber’s by 12.6 million and Barak Obama’s by 10 million!

Death profiles can also be ‘liked’, one can also be added to its friends. “Death, I like” is a message frequently seen on the pages of social networks. Should it be treated as a serious proclamation, an expression of fascination with death? Or perhaps the whole affair should be considered a provocation, as in the case of a book length interview with father Joachim Badeni, entitled “Death – recommended to all!” [Śmierć 2007]. These are all possibilities, impossible to determine, since the only thing at our disposal is the ‘thumbs up’ icon and the number of people who like the message.

Who is the Facebook Death, as it presents itself on its profiles? In the “info” tab, one finds “God” as an employer, “Hell” as upper school and “Heaven” as tertiary education (Death Doom profile). It describes itself as “broadly understood, yet incomprehensible.” The gender of Death is also unclear: it is both a woman and a man. The reason for this may be linguistic (Polish feminine but German masculine gender, der Tod), but may also be cultural. After all Thanatos was male. In this way, the Facebook profile of Death reveals the real gender of its owner. In the favorite quotations we may read: “The prospect of death is a very powerful motivation” (Death Doom). In favourite games – ‘dice’. Its wall
contains statements (liked, of course) such as “Time to die”, “I took him away from you”, “I am dying”, “Present” (Death Doom).

Below is an example of a longer text from the profile of “Master of Death”:

Did you know that your days are numbered?

Due to the unnecessarily lengthy procedures of vacating this world, and also as an expression of concern for our customers, Death has decided to improve and speed up the system of notifying its dear clients about their approaching departure. The world is speeding up and Death cannot remain behind. As such a new system will be implemented to inform of the upcoming end. This will greatly improve the procedures of delivering souls (if such are possessed) to their place of destination.

The first to be informed will be those who are unhappy with their lives, who persist in passionless relations, who constantly complain, who cannot enjoy life, who are malcontented, shit above their own arses, live at the expense of others, idiots, morons, imbeciles, pedophiles, necrophiles (I am the one who fucks corpses!), etc. Next will be hipsters, those who waste their talents, are unfulfilled and uncurious. Politicians and religious fundamentalists are covered by a special system of immediate eviction, whose reliability is still being tested. The first tests were promising – see TUPOLEW. The list will be updated on regular basis.

Check your profile everyday. Join events, group suicides, communicational catastrophes, deadly poisonings, etc. At the present time, cellular network and WiFi death are also being implemented.

Let us pay attention to a distinct colouring of this apocalyptic vision with terminology typical to the network environment: procedure, system, profile, implementation, WiFi, etc. A similar tone is maintained by the owner of the profile “Your Death”

„Do not try to block me. Do not invite me to be your friend – only I can do that... but won’t that be bad Omen for you? I died a long time ago, I do not remember that day. I do not remember my name. I do not remember where I lived. I remember only Death. I returned. Death observes us all, but follows you...”
Jan Białostocki in a book „The Gender of Death” invokes two traditions present in iconography, discussed by Lessing “Ancient artists portrayed the abstract concept of Death, the Death deity, not as a skeletons but as Thanatos, a youth who was the twin brother of Sleep” [Białostocki 1999, p.7]. The iconic layer of the Facebook profiles is closer to the medieval tradition. The uploaded illustrations are dominated by images of skeletons, cemeteries, skulls, ornaments of death from horror fiction and cinema. We may also find realistic photos with scenes of death (e.g. victims of road accidents). The majority of the music material uploaded to Death profiles consists largely of death metal, a variation of heavy metal music, derived from trash metal, created in the early 80’s of the 20th century. Let us also add that a band Death, who played this kind of music between 2003 and 2008 also has its own profile (162554 liking fans).

What does the image of the Facebook death tell us? It seems that death appears on that network in several contexts. Firstly, it is an embodiment of the postmodern tendency to deconstruct death, secondly, it fits into the pop cultural framework of discourse, thirdly it has a marketing function – death draws attention thus can be used to ‘sell’ particular values and ideologies (for instance the profile Melecjusz Death uploads materials of Młodzież Wszechpolska and narodowcy.net, two polish nationalistic organizations), but also of particular products (they are linked to pages which sell these products). How popular are they? In the broad context (of events, movies, for instance) they are quite elitist.

As an example, Death Doom has 19 friends, Death Everywhere 42, Death 266. Separate attention and discussion ought to be devoted to close social groups with the name Death. However, because of their hermetic character, this task is difficult, often impossible. It is known, however, that they group people particularly fascinated by death, sometimes dangerous (terrorists, potential suicide victims) and belong to the dark side of the net.

Zygmunt Bauman in his analysis of attitudes towards death, stated that there exist two strategies which make life with the awareness of the inevitability of death possible to bear [Bauman 1998, p. 106]. The first imitates Pascal’s observation, “when they could not find a remedy for death, to be happy they decided not to think about it.” The application of this rule leads towards constant entertainment which fills time and diverts one’s thoughts from death.
How should one judge in this context, the presence and the fascination with death on social networks? After all, death is not negated or rejected here, but, quite to the contrary, displayed in a most visible manner. On the other hand, the analysis of death profiles leads us to a conclusion that they are very frequently of infantile character and their purpose is that of game and play. What then remains? We can succumb to this fascination and repeat after Bach, ‘Come sweet death’. However Facebook has another option in store for its users. The button ‘Like’ can be negated by ‘don’t like’ and then we can repeat after Paul the Apostle the words of the first Letter to Corinthians, “Where, O death, thy victory?” (1 Cor. 15, 54)

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II. SOCIO-CULTURAL TRANSFORMATION: STORIES AND CASES
INTRODUCTION

In 2016, Australia and the Netherlands will commemorate 400 years since the sailor and explorer Dirk Hartog in the Dutch East India Company’s vessel ‘Eendracht’ (translated as ‘Harmony’, ‘Concord’ or ‘Unity’) mapped parts of the Australian coastline near what is now the Dirk Hartog Island in Western Australia. This was the second Dutch vessel to reach the Australian coast after the Willem Janszoon’s expedition with the ‘Duyfken’ (translated as ‘Little Dove’) in 1606. However Hartog’s maps were the first to confirm conclusively the existence of the ‘Great South Land’. These first journeys were long, difficult and because of imprecise ocean navigation devices, many ended unsuccessfully. It is estimated that some 200 people were shipwrecked and marooned forever on the Western Australian shores unable to return back to Europe.

Despite the existing archival, anthropological, archaeological, historic and folkloric evidence pertaining to the possible cohabitation between the mariners, merchants, soldiers and passengers of the shipwrecked Dutch vessels, and the local Aboriginal people, the story of these early European visitors is yet to be told. It is of interest not only to historians but also has direct importance to present generations of Australians who are their descendants. The influence of the early Dutch presence on the Australian continent, adds to its present-day vibrancy and multicultural diversity. This paper explores some of the available evidence about the marooned Dutch on the Western Australian coast and makes a strong argument that further research is needed to lift the veil of the past in order to better understand the present.
DUTCH SHIPWRECKS AND THE MAROONED

The Dutch East India Company’s (Vereinigde Oost Indisch Compagnie or VOC) connection with Australia began in March 1606 (Gaastra, 2002). The first point of contact was in Wik country, near what is now Weipa in the Gulf of Carpentaria, Queensland. Willem Jansen, skipper of the ‘Duyfken’ (a VOC Jacht) and his crew were looking for trading opportunities and they mapped 250 km of the coastline from Weipa to Cape Keerweer (Mutch, 1942; Wharton, 2005). More than 30 mariners from diverse national backgrounds mapped parts of the Great South Land’s coastline prior to 1770 when Captain James Cook declared its eastern half a British territory (Heeres, 1899; Appleyard and Manford, 1979; Henderson, 1985; Sigmond and Zuiderbaan, 1995). The Dutch were the first non-indigenous people to reach the Australian continent. Mariners, merchants, soldiers and passengers on ships belonging to the VOC, were also the first recorded Europeans to step foot on Western Australian soil (Schilder, 1976). This was mainly by chance, while in pursuit of the spice trade (Jacobs, 1991), and largely because the instruments used to determine longitude were still in their infancy.

Following the introduction in 1611 of Brouwer’s new route which took advantage of the Roaring Forties winds, it was not uncommon for ships that left Cape Town for the East Indies via this route, to travel too far east before turning north-east to Batavia (now Djakarta) (Appleyard and Manford, 1979; Gerritsen, 1994; Playford, 1996; Peters, 2004, 2006). The advantage of this shorter, cooler route was less illness, fewer deaths and food remained unspoiled longer. A disadvantage however was that ships often came to grief on the coast of Western Australia (WA). The then used navigation instruments could not calculate longitude very well (the more precise chronometers or marine clocks were introduced a century later) and the new route lead to several significant shipwrecks. The Western Australian Museum reports that some 1200 ships have met disaster along the coastline (Nairn, 1986). Gerritsen (2006) estimates a possible 200 people were marooned permanently on the WA coast. These included survivors of the ‘Batavia’, ‘Gilt Dragon’ and ‘Zuytdorp’ shipwrecks as well as the crews and landing parties of longboats sent to find them who were abandoned on shore when the weather became stormy (see Table 1).
Table 1: Shipwrecks and the marooned on the WA coast

<table>
<thead>
<tr>
<th>Year</th>
<th>Ship</th>
<th>Location Shipwreck/Longboat Lost</th>
<th>Number Rescued</th>
<th>Number Marooned</th>
<th>Location Marooned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1629</td>
<td><strong>Batavia</strong></td>
<td>Shipwreck 4 June 1629 Morning Reef, Wallabi Group, Abrolhos Islands</td>
<td>230 survived 125 later murdered</td>
<td>2 marooned Wouter Loos &amp; Jan Pelgrom de By van Bemel</td>
<td>Hutt River or Witticarra Creek</td>
</tr>
<tr>
<td>1629</td>
<td><strong>Sardam</strong></td>
<td>Longboat sent to Abrolhos Islands 13 October 1629</td>
<td>Sent to retrieve a barrel of vinegar, boat not seen again</td>
<td>5 missing sailors</td>
<td>Abrolhos Islands</td>
</tr>
<tr>
<td>1656</td>
<td><strong>Vergulde Draeck</strong></td>
<td>28 April 1656, the Vergulde Draeck, five kms off Ledge Point</td>
<td>193 on board, 75 made it to shore Vergulde Draeck found in 1963</td>
<td>68 marooned, left on the WA coastline</td>
<td>6 sailors made it to Batavia</td>
</tr>
<tr>
<td>1656</td>
<td><strong>Witte Valk &amp; Goede Hoop</strong></td>
<td>Goede Hoop shore party travels several miles inland</td>
<td>Sent to find the 68 marooned from the Vergulde Draeck</td>
<td>11 missing 3 sailors lost inland/ 8 sent to find them</td>
<td>Long-boat crew lost in the ocean</td>
</tr>
<tr>
<td>1658</td>
<td><strong>Waeckende Boey</strong></td>
<td>26 February 1658 shore party under Abraham Leeman</td>
<td>Leeman &amp; thirteen abandoned</td>
<td>10 Died en route to Batavia</td>
<td>4/14 made it alive to Batavia</td>
</tr>
<tr>
<td>1712</td>
<td><strong>Zuytdorp</strong> left Cape Good Hope 22 April 1712</td>
<td>Zuytdorp Zuytdorp Cliffs Murchison</td>
<td>Estimates 200-250 on board. Officially 152</td>
<td>Estimated 75-150 or more marooned</td>
<td>Wreck found 1927 confirmed 1959</td>
</tr>
<tr>
<td>1727</td>
<td><strong>Zeeuwik</strong></td>
<td>Half-Moon Reef, Abrolhos Islands 9 June 1727</td>
<td>100 survived; 88 rescued after many months on Gun Island</td>
<td>12 missing 2 marooned</td>
<td>Longboot crew never seen again</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL ESTIMATE</strong></td>
<td></td>
<td>100 Known Marooned 75+/- assumed marooned</td>
<td>TOTAL 173-225 or more</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled from Gerritsen (2006)

The Dutch were also the first to reach what is now the capital of Western Australia – Perth and its surrounding areas, including Rottnest Island (Stasiuk, 2013b). On 1 January 1658, the Dutch East India Company of Batavia sent two galliots, the ‘Waeckende Boey’ and the ‘Emerloort’ to search for the lost Dutch vessel ‘De Vergulde Draak’ (The Gilt Dragon) which had 68 survivors left behind in the South Land¹. This rescue campaign met with disaster and later in 1658, a second attempt was made by ‘Waeckende Boey’ and ‘Emeloort’ which also met disaster.

¹ Name given by the Dutch navigators to the coast line of Western Australia (Watson 1935).
A storm struck the coast and the ‘Waeckende Boey’ was swept south to become separated from the rescue party. Eventually the storm abated and the ship was safely anchored off the northerly point of an island. The ship’s master report indicated that the bearing was “…in slightly under 32 degrees S. Latitude…” (Nairn, 1986, p. 5) or the large island of Rottnest as “…the most northern point of Rottnest lies about 31 degrees, 59 minutes… and slightly more southward there is another small island…This has to be Carnac Island” (Nairn, 1986, p. 5). Evidence compelling enough to fire the imagination, but not to fix as fact, links the fate of those marooned to the Nanda\footnote{The Nanda (transcribed also as Nhanda) people are from the northern coastal region of the Yamaji (or Yamatji) land. The Yamaji has today seven main language groups including Nanda. Other Yamatji subgroups in the area who also claim cohabitation are Malgana (Shark Bay) and Wadjari (Murchison Gascoyne area) people.} and Nyungar\footnote{Transcribed also as Noongar, Noongar or Noongah or Nyoongar or Nyoongah.} (Perth) peoples of Western Australia. Survivors from the longboats abandoned by the Sardam and Goede Hoop ships, may also have made their lives with indigenous Australians.\footnote{http://www.nederland-australie2006.nl/geschiedenis/nl/html/ontdekkingsreizigers_scheepsreizen.html}

**CO-HABITATION WITH ABORIGINAL PEOPLE**

The first to be marooned were two recalcitrants – Wouter Loos and Jan Pelgrom de By van Bemel from the ‘Batavia’ which ran onto Morning Reef in the Wallabi Group of the Abrolhos Islands on 4 June 1629. The timely return of its skipper Pelsaert in a rescue ship the ‘Sardam’, saved the lives of survivors not murdered by a group of mutineers. After sentencing and hanging the major perpetrators, Pelsaert sentenced these two to be cast off on the coast. At noon on 16 November 1629 he provided them “a Champan with everything in it” (Pelsaert, 1963, p. 230) and ordered them to sail to shore with the directive to…

“...make themselves known to the folk of this land by tokens of friendship. Where to are being given by the Commandeur some Nurembergen [wooden toys and trifles], as well as knives, Beads, bells and small mirrors, of which you shall give to the Blacks only a few until they have grown familiar with them. Having become known to them, if they take you into their Villages to their chief men, have courage to...
go with them willingly. Man’s luck is found in strange places; if God guards you, you will not suffer any damage from them, but on the contrary, because they have never seen any white men, they will offer all friendship."\(^5\) (Pelsaert, 1963, p. 230).

As with most Indigenous groups, oral histories are essential to everyday life and both Aboriginal peoples have a rich culture based on the past, connecting them to the land and the spiritual world. Aboriginal oral history claims that the fortunate Europeans who reached the shore cohabited with the local Indigenous people. Yamaji (Nanda, Malgana and Wadjarri) stories talk that one or more of the many castaways fathered children with Aboriginal mothers. Similar claims are made by the Nyungars, the largest homogenous and most flourishing Indigenous race in Australia at the time (Bates, 1992). There is also recorded information in the local press following the British settlement of Western Australia. In July 1834 some Aborigines reported that they had contact with a party of whites living around 40-50 miles inland of the Swan River (Perth Gazette, 1834). No more was heard of this group, but in September that year the *Perth Gazette* re-published a British newspaper report in the *Leeds Mercury*, of a secret expedition that had revealed an unknown white colony living on the northern shore of New Holland, as Australia was known at the time. These people were said to be of Dutch extraction and to have been the descendants of VOC mariners shipwrecked some generations before (Perth Gazette, 1834). Others say they came from the Concordia that was lost in 1696.

Over the following decades, these incidents, mixed up with tales of mysterious settler parties and a lost white tribe resident in central Australia, flowed into folklore. They eventually developed into a legend complex in which one or probably more, survivors of Dutch shipwrecks settled on the western coast of the continent and intermarried with local Aboriginal groups. They effectively peopled Australia with Europeans more than a century before the arrival of the First Fleet – the eleven British ships bound for Australia, which reached the continent in 1788 (Gerritsen, 2006). In later years there would be echoes of these traditions in accounts of a tribe of fair, tall, blonde and blue-eyed Aborigines living to the north of the Swan River. The English-born Australian explorer

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5 Instructions for Wouter Loos and Jan Pelgrom de By van Bemel, 16 November 1629.
Augustus Gregory published such observations in the *Journals of Australian Exploration* in 1884 (Gregory, 1884/1969). Daisy Bates, an Irish-born journalist and anthropologist who emigrated to Australia in 1882, also wrote of her encounters with Aboriginal people with ‘Dutch’ features (Bates, 2004).

Evidence of cohabitation is also indicated through some agricultural practices observed by the early British explorers. In 1839 Lt. George Grey and members of an expedition, following a series of mishaps at Shark Bay and Murchison River, were struggling back to Perth on foot. North of Hutt River, on 4 April 1839, they came across yam fields ‘as far as we could see’ and ‘more had been done here to secure a provision from the ground by hard labour than I could believe in the power of uncivilised man’ (Grey, 1841, p. 12). When they reached Hutt River on 5 April Grey’s party passed the first of ‘two native villages, or, as the men termed them, towns, — the huts of which they were composed... being much larger, more strongly built, and very nicely plastered over the outside with clay, and clods of turf ’ (Grey, 1841, p. 19). Similar observations alluding to a sedentary lifestyle were later made by the explorer and surveyor Augustus Gregory. He reported that the Nanda ‘never dug a yam without planting the crown in the same hole’ (Chimmo, 1856; Gregory, 1887: p. 131).

Several reports over many years also attest to some Aborigines in the region having fair skin and European facial features. Two genetically identifiable diseases Porphyria Variegate and Ellis-van Creveld (which has a high incidence among Western Australian Aborigines) and also the Old Order Amish (to which some of the mariners may have belonged) are associated with the possible cohabitation. Both these syndromes are the result of ‘founder effect’ in their respective communities: the Mennonites of Lancaster County and the Dutch in South Africa. In population genetics, the founder effect is the loss of genetic variation that occurs when a new population is established by a very small number of individuals from a larger population6. The connection is that a particular portion of the 18th century crew on the Zuytdorp was recruited from the same region as the Old Order Amish (Hostetler, 1993; McKusick, 2000). The WA Aborigines and the Old Order Amish are the two main groups in the world to share these particular genetic conditions at a high order of significance

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(Goldbart, Minutillo and Hurst, 1992). In the general population of the United States, the frequency is 1 case per 60,000 live births, whereas among persons of the Old Order Amish, the incidence is estimated at 5 cases per 1000 live births. The frequency of carriers in this population may be as high as 13 per cent (McKusick, 2000). Goldblatt Minutillo and Hurst (1992) documented the second highest incidence of Ellis-van Creveld to be among the Aboriginal population in the south-west of Western Australia who have a purported carrier prevalence of 1/39 live births.

The potential contribution to the Indigenous genetic pool comes from a range of European backgrounds. For example, in addition to the Dutch sailors (estimated to have contributed 34 of the 104 known soldiers) on board when the Zuytdorp sank, there were also 70 from other European nations (including 35 from Germany, 4 from Switzerland, 3 from Norway, 4 from Prussia, 7 from Belgium, 1 each from Denmark and Latvia and 15 unknown) as well as the 112 people recruited from the garrison at Cape Town, according to the VOC archives in The Hague, the Netherlands.

Additional contributions to the genetic pool may also include survivors from other shipwrecks such as the ‘Batavia’, ‘Sardam’, ‘Goede Hoop’ and ‘Vergulde Draeck’ (Gilt Dragon) as well as more recent admixture as a result of colonisation and the development of sheep stations in the region. Documentation containing eye witness reports attests also to the fact that 68 crew and passengers from the ‘Vergulde Draeck’ wreck were marooned on the WA shore forever in Yuat\(^7\) Nyungar country, near where Lancelin now stands, 100 km north of Perth.

**THE ARTEFACTS**

Over time a range of objects and artifacts also turned up to provide even more tantalising clues that hint at the survival of the marooned. The unexplained up-rights and poles from the ‘Vergulde Draeck’ mentioned earlier by the ‘Waeckende Boey’ search parties were chanced upon again in the mid-19th century at three points along the coast, together with a spectacular incense urn

\(^7\) Also spelled as Yuad.
(Gerritsen, 1994). The urn was handed over to the New Norcia Mission in 1846, by some Juat people who had found it at a well about 20 km south of where the ‘Vergulde Draeck’ was wrecked (Gerritsen, 1994). In 1890, kangaroo shooters found a large rusty iron pot of about 50l capacity, a couple of horn spoons, a copper shovel and two crescent-shaped hatchets all indicating that it may have been one of the survivors’ camp sites (Gerritsen, 1994).

Further artefacts include an extremely weathered crumbling skeleton in a small cave, which showed signs of having been occupied, a clump of coins found on the beach opposite the ‘Vergulde Draek’ wreck, another coin was found on the banks of the Moore River, 65 kilometres inland, in 1957. In 1971 photographer Tony Bell claimed to have found a stone cross laid out on the ground, graves, fragments of green bottles and a ‘roofless stone hut’ to the north of the wreck site (The Sunday Times, 1971). It is not easy to link with any confidence all these with the survivors but they have not been properly explored.

An inscribed brass tin, known as a ‘Leyden Tobacco Tin’, similar to those found at other wreck sites, was discovered at Wale Well, 55 km north of the ‘Zuid-dorp’ wreck site in April 1990. It is thought to possibly have come from a survivor of that wreck (Playford, 1996), but how it got there is uncertain. An unusual grave at that location, found at the same time as the tobacco tin, could have some connection, but that too is uncertain (The West Australian, 1990). No other archaeological or observational evidence has yet come to light to provide us with any certainty as to the ultimate fate of any of these marooned seafarers.

**Significance of Further Research**

The story of the marooned survivors from the Dutch vessels is yet to be pieced together. Despite the existing abundant evidence, very little research has been done on these rich sources of proof and many other indicators of cohabitation on Nanda or Nyungar regions and the broader country. Little is known about any progenitor connections. Further research is that investigates the historical heritage of European contact with Aboriginal peoples more than 200 years prior to settlement by the British is well overdue. The implications from understanding the history of early European contacts can contribute to the current focus of
the Australian government’s policy on protecting and supporting Indigenous culture. It will contribute to knowledge advancement in place, identity and belonging of Aboriginal communities and their links to European cultures and enrich bilateral relationships between Australia and diverse European nations. New discoveries of shipwrecks are still being made (e.g. Amalfi, 2012a and b refers to ‘Ridderschap van Holland’ in 1694, ‘Fortuyn’ in 1724 or ‘Aagtekerke’ in 1726) and they require analysis and interpretation. This alludes to the possibility of even more people being left or marooned on the Western Australian.

Australia continues to perform extremely poorly on two highly important fronts as far as its Indigenous peoples are concerned. Firstly, it has failed them in terms of health, employment, education, longevity and overall quality of life as witnessed in many policy reports. Secondly, it has failed to properly understand Indigenous history and in particular the consequences from European contact. Further research is needed not only to tell the true story but also to address both of the above issues in an innovative, creative and inspiring way.

**CONCLUSION**

The oral history traditions and art of the Yamaji and Nyungar peoples support the notion of cohabitation, as do early newspaper articles (Perth Gazette, 1834, pp. 314, 318, 322-323, 326, 359), explorers’ diaries (e.g. Grey, 1841) and anthropologists’ reports (Bates, 2004). The Aboriginal academic Stasiuk (2013a) raised the interest in the forgotten Dutch presence on the Western Australian shores by creating visual representation of the history of Rottnest Island off the coast of Perth and the first contact with Europeans.

He recorded the memories of the Nyungar elder Noel Nunnup who explains:

“*I understand that the white people call it ‘Rottnest Island’ and, back in the sixteen hundreds a man visited, and he was a Dutchman, and he first described it as ‘a misty island’. And when he went back he recorded its location using the longitudes and latitude, and later another Dutch ship came, and they searched for the misty island – they were looking for a... a ship that was wrecked called the Ridderschap van Holland. And when they reached that parallel and they came in they...*"
knew they would find this island, and sure enough, there it was...”
(Stasiuk 2013a)

Other academics (Collard, Collard and Henderson, 1996; Collard and Palmer, 2008) also mapped possible meetings between Europeans from the VOC vessels and Aborigines. Further attempts to put together the story of the Dutch arrival to Australia were made by Peters (2006). Despite all this evidence there has been very little research interest in the true story of the marooned Dutch vessels mariners’ co-habitation with Western Australian Aboriginal peoples. This area and all remaining indicators have never been explored in depth. A detailed reliable fine-grained history is yet to be produced. The story is not only fascinating but it is also genetically highly significant as it opens the doors to a completely new view of the world with serious practical importance to those who have inherited it.

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CHANGES IN LIVELIHOOD PATTERN OF INTERNAL MIGRANTS IN SOME SELECTED AREAS OF DHAKA CITY

INTRODUCTION

Internal migration has become an important livelihood strategy for many people across the world. In Bangladesh, internal migration from rural to urban areas has been adopted by an increasing number of people who migrate to the capital city in search of better opportunities as well as a positive change to their livelihood.

The definition of ‘livelihood’ has been extensively discussed among academics and development practitioners (Ellis, 1998; Batterbury, 2001; Chambers and Conway, 1992; Carney, 1998; Bernstein, 1992; Francis, 2000, 2002; Radoki, 2002). There is a consensus that livelihood is about the ways and means of ‘making a living’. The most widely accepted definition of livelihood stems from the work of Robert Chambers and Gordon Conway (1992), ‘a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living’ (Carney, 1998, p. 4). Ellis (2000) suggests a definition of livelihood as incorporating activities, assets and access.

Livelihoods essentially revolve around resources such as land, crops, seed, labor, knowledge, cattle, money, social relationships and so on, but these resources cannot be disconnected from the issues and problems of access and changing political, economic and socio-cultural circumstances. Livelihoods are also about creating and embracing new opportunities. While gaining a livelihood or attempting to do so people may, at the same time, have to cope with risks and uncertainties, such as erratic rainfall, diminishing resources, pressure on the land, changing life cycles and kinship networks, epidemics, chaotic markets, increasing food prices, inflation and national and international competition. These uncertainties, together with new emerging opportunities, influence how material and social resources are managed and used and on the choices
people make. So, to study the changes in livelihood pattern of the internal migrants the resources, opportunities, risks and activities as well as the socio-economic, political and cultural contexts have to be considered.

Internal migration is a potential indicator for poverty reduction by helping to highlight the positive changes to the livelihood patterns of the migrants, thus meeting the Millennium Development Goals (MDGs) and contributing to greater economic growth in developing countries than international migration. This is due to because of four distinct reasons. First, internal migration stems from a broader base where smaller sums of money are evenly distributed to specific areas and poor families through internal remittances (rather than international remittances, which reach fewer people). Second, it is likely that internal migration will continue to increase at a faster rate than international migration. Third, internal migration involves poorer people from poorer regions and has a strong role to play in achieving the MDGs. Fourth; it is an important driver of growth in many sectors including agriculture, manufacturing, construction, and services. Internal migration involves men, women and children, and includes rural to rural, urban to rural, urban to urban and rural to urban flows. People move to towns and cities for higher incomes and better living conditions (Mazumdar, 1987). Rural to urban migration is undoubtedly the most prevalent form of internal migration in Bangladesh. In order to mainstream migration in the pro-poor policies it is important to take advantage of the growing rural-urban synergies.

Bangladesh is one of the developing countries in Asia with a high level of population redistribution and internal migration. Internal migration can be a crucial livelihood strategy for many poor people, and an important contributor to national economic growth (DFID, 2004). Internal migration has the potential to contribute to development in a number of ways. By supplementing their earnings through off-farm labor in urban areas, rural households diversify their sources of income and accumulate more collective capital. In the short term migration may result in the loss of local financial and human capital, but it can also be beneficial and contribute to the long-term development of rural areas. This study focused on the ways in which the relationship between internal migration and livelihood patterns is understood and explained, reflecting on both the diversity of definitions and the understanding of migrants and migration.
OBJECTIVE OF THE STUDY

The main objective of this study was to analyze the impact of internal migration on the migrants sampled and establish the specific demographic, socio-economic, health and psychological consequences, which ultimately lead to the observed changes in livelihood patterns across some selected areas of Dhaka City.

METHODOLOGY

Study Design

A cross sectional analysis was employed for this study. The data was collected through population surveying. A semi structured questionnaire with both open and close ended questions was developed phase by phase. The questionnaire was constructed in such a way to obtain pre and post migration information and to get a clear idea about the changes in livelihood experienced. The open ended questions were included to get information in depth on some aspects and to understand the real context of the migration. The collected data was analyzed using SPSS and MS Excel.

Study Area and Population

In accordance with the research topic, the scope of the study was limited to the internal migration to Dhaka. The study area was Dhaka city. To represent the overall population, Dhaka city was divided into Nineteen PSUs (Primary Sampling Units) as defined by the Bangladesh Bureau of Statistics (BBS), which has been considered as the primary source of population data for this study. Sample selection was done in two stages. In the first stage, simple random sampling was applied to three selected PSUs [Dhanmondi (Elephant Road), Choto Diya Bari (Mirpur Majar Road) and Shahjahan Road (Mohammadpur)] out of the nineteen incorporated into the study. At the second stage, the household lists of the three PSUs were taken as the population frame. Then from each PSU 175 household were selected at random. Ten households from each PSU were selected in addition, to cover the non-migrant households if the number of non-migrant households in first selection exceeded 25. Among the 500 household
interviewed, 168 were taken from Elephant Road, Dhan-mondi; 165 were from Choto Diya Bari, Mirpur Majar Road and 167 from Shahjahan Road, Mohammadpur. People coming from outside of Dhaka, who stayed for at least 3 months were considered as migrants. People who migrated to Dhaka many years ago who failed to recall any information on previous living arrangements and location, were not considered as respondent due to the likely bias favoring Dhaka. Households of the three PSUs were visited and occupants were asked whether or not they were migrants. Then if the person identified as a migrant, an interview was conducted with him/her. Primarily, the household heads of the migrant families were interviewed but in some cases the migrants were students not household heads, living alone in Dhaka at mess or rented house. These respondents cover a different pattern of migration.

**Data Collection**

The data collection instrument (interview schedule) was first designed in English and then translated into Bengali. Before collecting the data several preparatory tasks such as building three teams for data collection (five members in each team), involving recruitment and training. At first the interviewers were trained and instructed and then 10 pre-test interviews were done in the presence of the researcher to see whether or not the interviewer was able to get the information needed for the fulfillment of the objectives of the study. The researcher supervised the whole data collection work and in some cases households were re-interviewed to verify the data collected by the interviewer.

**Data Analysis**

Information from each individual questionnaire was drawn for analysis. Data analysis was performed by using statistical software SPSS and MS Excel. The analysis was done at two different levels:

1. At the uni-variate level, frequency of distribution and the percentage of relevant variables were done and presented in both tabular and graphical form.
2. At the bi-variate level, correlation was conducted to observe the relationship between dependent and independent variables. In this correlation analysis, the dependent variable was the Wealth Index. The traditional concept
of poverty, which places emphasis on income, has been identified in developing countries as too narrow (NISER, 2003), and often there are issues with the validity of income data due to reporting errors. Montgomery et al. (2000) noted that in developing countries, households often draw their incomes from multiple sources that can change from year to year and even from season to season. The transitory nature of some employment, coupled with the uncertainty of net economic return, makes it implausible to regard any one year’s income as representative of the incomes earned over the longer time span in which demographic decisions are made. On the basis of this assumption, the study used wealth index as a measure of economic status. Understanding the consequences of migration on wealth index at the household level can aid our understanding of the change in livelihood pattern experienced by internal migrants.

This wealth index was developed from the number and price of the household items observed in each interviewed migrants home. At first, for each of the listed items and the other items that were identified during the data collection (total thirty listed items), a standard price was fixed. Then by multiplying the specified price (which was worked out separately for each particular item), with the number of that item each interviewed migrant possessed and then adding them together the wealth index was found. For convenience in analysis, the wealth index was divided by 100000 and then was categorized as poor (0.000-0.400), lower middle (0.401- 0.800), middle (0.801- 1.500), upper middle (1.501- 2.500) and rich (> 2.501). Cross tabulations were also made to compare the relationship among different variables. Moreover, to find whether the relationship was significant or not, the chi-square test was used.

**RESULTS**

**Distribution of the Change of Variables before and after Migration**

The change in migrant numbers due to internal migration is observed through different demographic and socio-economic variables like family type, education, occupation, income, savings, expenditure, wealth index, etc., which are
described below:

**Distribution of the Change of Family Type before and after Migration**

**Table 5.1:** Distribution of the Change of Family Type before and after Migration

<table>
<thead>
<tr>
<th>Family Type (Before Migration)</th>
<th>Nuclear (After Migration)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear</td>
<td>332</td>
<td>356</td>
</tr>
<tr>
<td>Joint</td>
<td>107</td>
<td>138</td>
</tr>
<tr>
<td>Extended</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>443</td>
<td>500</td>
</tr>
</tbody>
</table>

**Source:** Own Data Analysis

The number of nuclear families before migration (356) almost remains the same after migration (332) with few having entered into the joint (20) and extended (4) family (see Table 5.1). The joint family (138) has mostly split to nuclear (107). The extended family (6) remains almost the same (4). Currently the nuclear family has a percentage of 88.6% which is the most dominant (see Figure 5.1).

**Figure 5.1:** Comparison of Family Type before and after Migration

**Source:** Own Graphic Using Data from Table 5.1
Distribution of the Change of Family Size before and after Migration

Table 5.2: Distribution of the Change of Family Size before and after Migration

<table>
<thead>
<tr>
<th>Family Size (Before Migration)</th>
<th>Family Size (After Migration)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>151</td>
<td>165</td>
</tr>
<tr>
<td>Medium</td>
<td>200</td>
<td>299</td>
</tr>
<tr>
<td>Large</td>
<td>21</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>372</strong></td>
<td><strong>500</strong></td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

The number of small sized families before migration (165) almost remains the same after migration (151), with few entered into the medium sized family (14) (see Table 5.2). The medium sized family (299) has mostly split into small sized family (200). The large family (36) splits into small sized family (21) and medium sized family (14). Currently the small sized family has a percentage of 74.4% which is the most dominant (see Figure 5.2).

Figure 5.2: Comparison of Family Size before and after Migration

Source: Own Graphic using Data from Table 5.2

Distribution of the Change of Main Occupation before and after Migration

The number of unemployed (77) before migration (see Table 5.3), is reduced to (1), with all others having been entered into some profession mainly in services...
and the garment sector (13). Among the students (240), (70) remain the same after migration, while (134) have started in the service sector. From the agricultural background, no body remains the same. All have different professions now, among whom a large proportion is in Business (12). Currently 48.9% of the people sampled work in service, while an equal percentage of people are students or in the business sector (see Figure 5.3).

**Table 5.3:** Distribution of the Change of Main Occupation before and after Migration

<table>
<thead>
<tr>
<th>Main Occupation (After Migration)</th>
<th>Unemployed</th>
<th>Business</th>
<th>Service</th>
<th>Student</th>
<th>Informal Sector</th>
<th>House Wife</th>
<th>Garments</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>1</td>
<td>8</td>
<td>35</td>
<td>2</td>
<td>8</td>
<td>7</td>
<td>13</td>
<td>3</td>
<td>77</td>
</tr>
<tr>
<td>Business</td>
<td>0</td>
<td>23</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>Service</td>
<td>0</td>
<td>7</td>
<td>49</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>61</td>
</tr>
<tr>
<td>Student</td>
<td>1</td>
<td>20</td>
<td>134</td>
<td>70</td>
<td>2</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>240</td>
</tr>
<tr>
<td>Informal Sector</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>15</td>
<td>4</td>
<td>43</td>
</tr>
<tr>
<td>House Wife</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
<td>12</td>
<td>6</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
<td>73</td>
<td>244</td>
<td>73</td>
<td>34</td>
<td>24</td>
<td>38</td>
<td>11</td>
<td>499</td>
</tr>
</tbody>
</table>

**Source:** Own Data Analysis

**Figure 5.3:** Comparison of Main Occupation before and after Migration

**Source:** Own Graphic Using Data from Table 5.3.
Table 5.4: Distribution of Father’s Occupation and Respondent Occupation

<table>
<thead>
<tr>
<th>Father’s Occupation</th>
<th>Main Occupation of Respondent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unemployed</td>
<td>Business</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Business</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Service</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Fisherman</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Washer man</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rickshaw puller</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Day laborer</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Housewife</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Retired</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Driver</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Shopkeeper</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>59</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

Out of the fathers who were business men before migration (104), (15) of their sons are in business, (47) in service and (17) are students (see Table 5.4). Not one of the sons of fathers who were in the agricultural sector before migration has jobs in the same sector. This is also true of the informal sector for migrants whose fathers were in the same sector.

Distribution of the Change of Training before and after Migration

Table 5.5: Distribution of the Change of Training before and after Migration

<table>
<thead>
<tr>
<th>Training (Before Migration)</th>
<th>Training (After Migration)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>31</td>
</tr>
<tr>
<td>No</td>
<td>92</td>
<td>321</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>377</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis
Among the migrants sampled (413) indicated they had no form of training prior to migration with, (92) of them indicating that they had received training later after migration (see Table 5.5). It is observed that the percentage of people who have received training has increased (24.6%) after migration than before (17.4%) migration (see Figure 5.4).

**Figure 5.4: Comparison of Training before and after Migration**

![Comparison of Training before and after Migration](chart.png)

Source: Own Graphic Based on Data from Table 5.5

**Distribution of the Change of Monthly Income before and after Migration**

Table 5.6: Distribution of the Change of Monthly Income before and after Migration

<table>
<thead>
<tr>
<th>Monthly Income (Before Migration)</th>
<th>Monthly Income (After Migration)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low</td>
<td>51</td>
</tr>
<tr>
<td>Low Medium</td>
<td>Low Medium</td>
<td>16</td>
</tr>
<tr>
<td>Medium</td>
<td>Medium</td>
<td>62</td>
</tr>
<tr>
<td>High Medium</td>
<td>High Medium</td>
<td>66</td>
</tr>
<tr>
<td>High</td>
<td>High</td>
<td>95</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>290</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

The groups were categorized as Low Level Income (0-600 Tk.), Low Medium
Level Income (601-2000 Tk.), Medium Level Income (2001-5000 Tk.), High Medium Level Income (5001-12000 Tk.) and High Level Income (>12000 Tk.). Out of the people classified as having low income (290) before migration (95) have entered into the High Income Category, (66) into High Medium, (62) into Medium and (16) have moved up into the Low Medium category (see Table 5.6). Among the people classified within the low medium income category before migration (58), (24) are now at medium, (23) at high medium and (11) are with high income. People who were originally classified within the medium income category (88), get into the high medium (43) and high (17) income category. Of the 45 people with high medium, 15 entered into the high category.

**Distribution of the Change of Wealth Index before and after Migration**

**Table 5.7: Distribution of the Change of Wealth Index before and after Migration**

<table>
<thead>
<tr>
<th>Wealth Index (Before Migration)</th>
<th>Poor</th>
<th>Lower Middle</th>
<th>Middle</th>
<th>Upper Middle</th>
<th>Rich</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wealth Index (After Migration)</td>
<td>Poor</td>
<td>51</td>
<td>95</td>
<td>34</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Lower Middle</td>
<td>5</td>
<td>27</td>
<td>41</td>
<td>6</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>2</td>
<td>7</td>
<td>36</td>
<td>36</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Upper Middle</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Rich</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>129</td>
<td>118</td>
<td>80</td>
<td>115</td>
<td>500</td>
</tr>
</tbody>
</table>

*Source: Own Data Analysis*

The groups were categorized as poor (0.000-0.400), lower middle (0.401-0.800), middle (0.801-1.500), upper middle (1.501-2.500) and rich (>2.501). Among the people, who were categorized into the poor group (208) before migration, (95) have entered into the lower middle group, (34) into the middle group, (9) into the upper middle group and (19) into the rich group (see Table 5.7). The 112 people categorized into the lower middle category are split into middle (41), upper (6) and rich (33). Thirteen people have progressed into the rich group out of the 41 people belonging to the upper middle group before migration. The percentage of people belonging to the poor group has decreased (from 41.6 to 11.6) and all other groups have increased especially the rich group.
from 6 to 23 percent (see Figure 5.5).

**Figure 5.5:** Comparison of Wealth Index before and after Migration

![Comparison of Wealth Index before and after Migration](image)

Source: Own Graphic Based on Data from Table 5.7

**Distribution of the Change of Monthly Savings before and after Migration**

**Table 5.8:** Distribution of the Change of Monthly Savings before and after Migration

<table>
<thead>
<tr>
<th>Monthly Savings (Before Migration)</th>
<th>Monthly Savings (After Migration)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Low</td>
<td>Low Low</td>
<td>153</td>
</tr>
<tr>
<td>Low Medium</td>
<td>Low Medium</td>
<td>23</td>
</tr>
<tr>
<td>Medium Low</td>
<td>Medium Low</td>
<td>198</td>
</tr>
<tr>
<td>Medium Medium</td>
<td>Medium Medium</td>
<td>99</td>
</tr>
<tr>
<td>Medium High</td>
<td>Medium High</td>
<td>50</td>
</tr>
<tr>
<td>High Low</td>
<td>High Low</td>
<td>186</td>
</tr>
<tr>
<td>High Medium</td>
<td>High Medium</td>
<td>51</td>
</tr>
<tr>
<td>High High</td>
<td>High High</td>
<td>500</td>
</tr>
</tbody>
</table>

**Source:** Own Data Analysis

The groups were categorized as Low Level Income (0-500 Tk.), Low Medium Level Income (501- 2000 Tk.), Medium Level Income (2001- 5000 Tk.), High Medium Level Income (5001- 12000 Tk.) and High Level Income (> 12000 Tk.). The people with low savings (330) before migration have entered into the High (35), High Medium (16), Medium (35) and Low Medium (91) categories.
(see Table 5.8). Among the people with low medium savings (99) before migration, 24 are now at medium, 6 at high medium and 2 are now within the high income category. Some of the people who were of medium income (50) before migration, move into the high medium (7) and high (3) income categories. Of the 17 people with high medium income before migration (8) of them entered into the high category.

_Distribution of the Change of Education before and after Migration_

**Table 5.9:** Father’s Education and Education of the Respondent before Migration

<table>
<thead>
<tr>
<th>Father's Education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No education</td>
<td>32</td>
</tr>
<tr>
<td>Below Primary</td>
<td>28</td>
</tr>
<tr>
<td>Primary</td>
<td>55</td>
</tr>
<tr>
<td>Secondary</td>
<td>66</td>
</tr>
<tr>
<td>Higher Secondary</td>
<td>140</td>
</tr>
<tr>
<td>Degree/Honors/Equivalent</td>
<td>62</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>409</strong></td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

Among the fathers who had no education (122), only (27) of their sons have no education before migration (see Table 5.9). Of the fathers who attained higher secondary only 4 of their sons have no education before migration. Almost the same scenario is repeated in the next phase with the sons who have continued their education after migration (see Table 5.10).
Table 5.10: Father’s Education and Education of the Respondent after Migration

<table>
<thead>
<tr>
<th>Respondents Education (After Migration)</th>
<th>Father's Education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Education</td>
<td>Secondary</td>
</tr>
<tr>
<td>Secondary</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Higher Secondary</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Degree/Honors/Equivalent</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

Distribution of the Change of Total land before and after Migration

Table 5.11: Distribution of the Change of Total Land before and after Migration

<table>
<thead>
<tr>
<th>Total Land Amount</th>
<th>Total land (Before Migration)</th>
<th>Total land (After Migration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount in Katha</td>
<td>Percentage</td>
<td>Percentage</td>
</tr>
<tr>
<td>2-5</td>
<td>0.4</td>
<td>1.3</td>
</tr>
<tr>
<td>5-10</td>
<td>3.7</td>
<td>4.3</td>
</tr>
<tr>
<td>10-25</td>
<td>21.1</td>
<td>23.7</td>
</tr>
<tr>
<td>25-50</td>
<td>26.0</td>
<td>22.8</td>
</tr>
<tr>
<td>50-80</td>
<td>15.0</td>
<td>17.2</td>
</tr>
<tr>
<td>&gt;80</td>
<td>33.7</td>
<td>30.6</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

It is observed that, migrants who had the land amount of 2-5, 5-10, 10-25 and 50-80 Katha before migration, their total land after migration has increased (see Table 5.12). However those who had the total land of 25-50 and more than 80 Katha before migration, their total land after migration has decreased (see Figure 5.6).
Figure 5.6: Comparison of Total Land before and after Migration

Source: Own Graphic Based on Data from Table 5.11

Distribution of the Change of Number of Children before and after Migration

Table 5.12: Distribution of the Change of Number of Children before and after Migration

<table>
<thead>
<tr>
<th>No. of Children (After Migration)</th>
<th>No. of Children (Before Migration)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>% within No. of Children Before Migration</td>
<td>27.3%</td>
</tr>
<tr>
<td>Two</td>
<td>Count</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>% within No. of Children Before Migration</td>
<td>45.5%</td>
</tr>
<tr>
<td>Three</td>
<td>Count</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>% within No. of Children Before Migration</td>
<td>18.2%</td>
</tr>
<tr>
<td>Four or More</td>
<td>Count</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>% within No. of Children Before Migration</td>
<td>9.1%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>% within No. of Children Before Migration</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis
Of the people who had one child before migration (33), 9 of them remained the same, but the rest now have had two or more children. Among the migrants who had two or three children before migration, the majority have the same after migrations with only a few having more children (see Table 5.12).

**Distribution of the Change of Treatment Fee before and after Migration**

**Table 5.13:** Distribution of the Change of Doctor’s Fee before and after Migration

<table>
<thead>
<tr>
<th>Doctors Fee Amount (Before Migration)</th>
<th>Doctors Fee (Before Migration)</th>
<th>Doctor’s Fee (After Migration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Taka</td>
<td>Percentage</td>
<td>Percentage</td>
</tr>
<tr>
<td>0</td>
<td>11.8</td>
<td>0.6</td>
</tr>
<tr>
<td>1-20</td>
<td>25.6</td>
<td>2.8</td>
</tr>
<tr>
<td>20-50</td>
<td>25.8</td>
<td>6.6</td>
</tr>
<tr>
<td>50-100</td>
<td>27.2</td>
<td>28</td>
</tr>
<tr>
<td>100-150</td>
<td>3.6</td>
<td>6.4</td>
</tr>
<tr>
<td>150-250</td>
<td>4.8</td>
<td>33.6</td>
</tr>
<tr>
<td>&gt;250</td>
<td>1.2</td>
<td>22</td>
</tr>
</tbody>
</table>

**Source:** Own Data Analysis

The number of people with a Doctor’s Fee within the 50-100, 100-150, 150-200 and >250 taka categories have increased after migration (see Table 5.13). There are now a very few people with a Doctor’s Fee below fifty taka (see Figure 5.7).

**Figure 5.7:** Comparison of Doctor’s fee before and after Migration

**Source:** Own Graphic Based on Data from Table 5.13
Table 5.14: Distribution of Medicine Fee before and after Migration

<table>
<thead>
<tr>
<th>Medicine Fee Amount</th>
<th>Medicine Fee (Before Migration)</th>
<th>Medicine Fee (After Migration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Taka</td>
<td>Percentage</td>
<td>Percentage</td>
</tr>
<tr>
<td>0</td>
<td>4.4</td>
<td>0.2</td>
</tr>
<tr>
<td>1-20</td>
<td>8.4</td>
<td>0</td>
</tr>
<tr>
<td>20-50</td>
<td>21.8</td>
<td>4.6</td>
</tr>
<tr>
<td>50-100</td>
<td>38.2</td>
<td>28.4</td>
</tr>
<tr>
<td>100-150</td>
<td>9.4</td>
<td>10.4</td>
</tr>
<tr>
<td>150-250</td>
<td>15</td>
<td>36.6</td>
</tr>
<tr>
<td>&gt;250</td>
<td>2.8</td>
<td>19.8</td>
</tr>
</tbody>
</table>

**Source:** Own Data Analysis

Following migration the medicine fee has increased for the 100-150, 150-200 and >250 taka categories, while the 50-100 category has dropped from 38.2% to 28.4% (see Table 5.14). In addition a very few people are now in the lower categories (see Figure 5.8).

**Figure 5.8:** Comparison of Medicine fee before and after Migration

**Source:** Own Graphic Based on Data from Table 5.14
Distribution of the Change of Transport Cost before and after Migration

Table 5.15: Distribution of Transport Cost before and after Migration

<table>
<thead>
<tr>
<th>Transport Fee Amount</th>
<th>Before Migration</th>
<th>After Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Taka</td>
<td>Percentage</td>
<td>Percentage</td>
</tr>
<tr>
<td>0</td>
<td>27.0</td>
<td>8.8</td>
</tr>
<tr>
<td>1-20</td>
<td>46.4</td>
<td>56.4</td>
</tr>
<tr>
<td>20-50</td>
<td>23.4</td>
<td>26.2</td>
</tr>
<tr>
<td>&gt;50</td>
<td>3.2</td>
<td>8.6</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

In all the categories except the first (0), the percentage increase for each transport fee category has increased after migration (see Table 5.15 and Figure 5.9).

Figure 5.9: Comparison of Transport Fee before and after Migration

Source: Own Graphic Based on Data from Table 5.15
Perception of the Migrants about the Change

Fulfillment of Migration Purpose

Table 5.16: Fulfillment of Migration Purpose

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>3.8</td>
</tr>
<tr>
<td>Slightly fulfilled</td>
<td>27.8</td>
</tr>
<tr>
<td>Not yet; but hoping to fulfill in future</td>
<td>19.2</td>
</tr>
<tr>
<td>Yes</td>
<td>49.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

It is observed that, the majority of the migrants (49.2%) have fulfilled their migration purpose (see Table 5.16). In addition 27.8% have slightly fulfilled their migration purpose, while an additional 19.2% have not yet succeeded but are hopeful of doing so (see Figure 5.10). Only 3.8% specifically indicated that they have not fulfilled their migration purpose.

Figure 5.10: Comparison of Fulfillment of Migration Purpose

Source: Own Graphic Based on Data from Table 5.16
State of Satisfaction of the Migrants

Table 5.17: State of Dissatisfaction of the Migrants

<table>
<thead>
<tr>
<th>First Reason for Dissatisfaction</th>
<th>Satisfaction with socio-economic condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familial Problem</td>
<td>no</td>
</tr>
<tr>
<td>Poor income</td>
<td>18</td>
</tr>
<tr>
<td>Unemployment</td>
<td>33</td>
</tr>
<tr>
<td>Yet to Established</td>
<td>6</td>
</tr>
<tr>
<td>Others</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>103</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

Of the 103 migrants who are not satisfied with their current socio-economic condition (see Table 5.17), the most common reason stated was poor income (33). Other reasons are familial (18), unemployment (6) and establishment problems (7).

Table 5.18: State of Satisfaction of the Migrants

<table>
<thead>
<tr>
<th>First Reason for satisfaction</th>
<th>Satisfaction with socio-economic condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic development</td>
<td>Yes</td>
</tr>
<tr>
<td>Increased social status</td>
<td>287</td>
</tr>
<tr>
<td>Educational attainment</td>
<td>16</td>
</tr>
<tr>
<td>Increased standard of living</td>
<td>47</td>
</tr>
<tr>
<td>Children's education and better future</td>
<td>36</td>
</tr>
<tr>
<td>City based facilities</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>396</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

On the contrary, the people who are satisfied (396) with their condition (see Table 5.18) have described economic development (287) as the main reason behind their satisfaction; among other reasons are educational attainment (47),
standard of living (36) and social status (16).

**Problems in Dhaka**

The percentage of migrants having problems in Dhaka specifically is much closer (see Table 5.19). The #1 and #2 problems nominated by the migrants moving into Dhaka are presented in Tables 5.20 and 5.21.

**Table 5.19:** Any Problems to be faced as an Inhabitant of Dhaka

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>47.2</td>
</tr>
<tr>
<td>No</td>
<td>52.8</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Own Data Analysis*

**Table 5.20:** 1st Problem in Dhaka

<table>
<thead>
<tr>
<th>Problem</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>89</td>
</tr>
<tr>
<td>Water</td>
<td>4</td>
</tr>
<tr>
<td>Gas</td>
<td>35</td>
</tr>
<tr>
<td>Economic Insolvency</td>
<td>33</td>
</tr>
<tr>
<td>Problem in Living</td>
<td>21</td>
</tr>
<tr>
<td>Insecurity</td>
<td>9</td>
</tr>
<tr>
<td>High Living Cost</td>
<td>15</td>
</tr>
<tr>
<td>Unhealthy Environment</td>
<td>5</td>
</tr>
<tr>
<td>Population Problem</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: Own Data Analysis*
Table 5.21: 2nd Problem in Dhaka

<table>
<thead>
<tr>
<th>Problem</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>47</td>
</tr>
<tr>
<td>Gas</td>
<td>23</td>
</tr>
<tr>
<td>Economic Insolvency</td>
<td>3</td>
</tr>
<tr>
<td>Problem in Living</td>
<td>19</td>
</tr>
<tr>
<td>Insecurity</td>
<td>9</td>
</tr>
<tr>
<td>High Living Cost</td>
<td>18</td>
</tr>
<tr>
<td>Unhealthy Environment</td>
<td>11</td>
</tr>
<tr>
<td>Population Problem</td>
<td>7</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

So, among the problems nominated by the migrants, the general problems of electricity, water, and gas are dominant. Other than these, there are problems with economic insolvency, high living cost, problems in living, unhealthy environment, insecurity, population problem etc. Though migrants experienced these problems they did not try to return to their place of origin prior to migration, or move on to any other place. Table 5.22 highlights some of the reasons for this.

Table 5.22: Reason for Staying in Dhaka though Facing Some Problems

<table>
<thead>
<tr>
<th>Problem in Dhaka?</th>
<th>Reason one for not leaving Dhaka</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>More Job Opportunity</td>
<td>Good Salary</td>
</tr>
<tr>
<td>yes</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Own Data Analysis

It is observed that business (156), economic insecurity (41), more job opportunity (26) and good salary (13) were the main reasons for not leaving Dhaka.
**DISCUSSION**

The study shows that following migration joint families have mainly broken into smaller nuclear families. This is because migrants who came as part of a joint or extended family tend to split into their own individual nuclear families after migrating. The medium and large sized family also split into small sized family units after migration. In addition many people who were either unemployed or students before migration, are now mostly employed in the service sector or in other professions.

Compared with the father’s occupation it is found that none of the son/daughters of the unemployed father is unemployed after migration. Moreover none of the offspring are doing any agricultural related jobs following migration. Also the percentage of people receiving some form of professional training is higher following migration. This results in a greater degree of benefit as more people are gaining the skills they need to improve their chances of getting a job or improve their current profession (i.e. receiving a promotion) as well as enhancing their personal life, education, etc.

The study shows that most of the people who were within the poor, lower middle or middle income categories before migration have moved up into the middle, upper middle and rich income groups afterwards. As the value of money has increased, the people who were considered poor or lower middle before migration, are now in upper categories. Additionally many people previously belonging to poor or lower middle families before migration have improved their position thanks to job and business opportunities realized after migration. The monthly income and monthly savings of migrants of all income categories has largely increased with very few individuals reporting no improvement. The study also shows that of the fathers who had no education before migration, most of their son/daughters have achieved some form of education following migration. Those fathers with higher secondary level of education prior to migration all have their sons/daughters in the higher education streams.

Land ownership is very similar before and after migration. In some cases the total land has decreased. One possible reason for this is that migrants may have sold their lands to support their move. Alternatively in other cases the land has
increased as the migrants have purchased more after coming to Dhaka. In terms of childbirth most changes occur with migrants who had one or two children before migration. Many of these parents have had more children since.

It was also determined that before migration doctor and medicine fees were much lower compared to current fees. A possible reason for this is that some migrants may have received free or heavily discounted treatment before migration, a situation which is not seen afterwards. Many migrants have also indicated that they have achieved their purpose in migrating, while some have slightly achieved their purpose or have not yet, but are hopeful to fulfill it in the future. Very few migrants indicated that they had no hope of fulfilling their primary purpose behind their migration.

Most of the migrants are satisfied with their current socio-economic condition which is mainly due to positive experiences in regard to their economic development, educational attainment, increased standard of living, social status etc. Again very few are not satisfied with their current condition, which is mainly due to poor income, familial problems, unemployment and establishment problems.

Problems specific to living in Dhaka is divided into equal opinion among migrants. Of the problems experienced electricity, water, and gas are dominant. Other than these, there are problems with economic insolvency, high living cost, problems in living, unhealthy environment, insecurity, population problem, etc. Those experiencing these problems are not leaving Dhaka due to economic insecurity (unestablished without the resources to move on again), greater business/job opportunities and good salary, which encourages them to remain despite the issues.

**CONCLUSION**

A few conclusions may be drawn relating internal migration & it consequences, based on this research, which has observed changes in the livelihood of its subjects following internal migration into Dhaka. The demographic and socio-economic characteristics have altered for most of the migrants and their families positively, as their purpose of migration has been fulfilled. Most people have
improved their position than before migration and are satisfied with their current condition. Those that were not satisfied do not want to leave the city for the existing opportunities and future well-being. However, the problems these individuals have identified with living in Dhaka, along with those highlighted in other present research, can be addressed and will act as an important guide line for policy makers. Thus, this study may contribute in reviewing and improving existing government policies and instruments.

**Policy Implication**

In Bangladesh, most internal migrants are coming to Dhaka to change their livelihood pattern and lead an improved life. However, the capital city is gradually reaching its population capacity and ability to accommodate new migrants. This is beginning to result in a failure to support new migrants with their necessities. So, it is necessary to think about the people who are already living in Dhaka and also potential population increases resulting from people living in other rural or urban areas, who will migrate to Dhaka to improve their livelihood pattern. On the basis of the findings of this study the following policy instruments can be recommended:

1. Livelihood outcomes need to be followed. Livelihood outcomes are the goals to which people aspire, the results of pursuing their livelihood strategies. Livelihood approaches stress the importance of understanding and supporting poor people’s efforts to achieve these goals. Livelihoods approaches try to understand the strategies pursued and the factors behind people’s emphasizing positive aspects while overcoming constraints. The choice of which strategies to implement is a dynamic process in which people combine activities to meet their changing needs. Social protection programs can support the extreme poor to achieve their own positive livelihoods outcomes in cases where they are unable to compete with those with greater access to assets.

2. Rural areas of Bangladesh are mostly underdeveloped and most of the people live below the poverty line for many reasons. In this background they move to urban areas to survive. If rural people in such circumstances, could be provided with employment in their respective areas, by creating local opportunities, particularly on a self-help basis, rural poverty would decrease
migration into cities would be reduced.

3. Along with the increase of literacy rate(s) among the adults and the children there should be skill development training on various trades and occupations. Government initiatives need to be geared up to that level. More skill fronts are required to cater to the needs of lower class populations particularly in rural Bangladesh.

4. Many of the migrants are day laborers and lower class employees. Above all, all of them are unskilled. As a result, their income is very low. With this low income they cannot maintain families. In this regard, new schemes must be introduced for helping them to earn extra income, together with streamlining the government agencies responsible for providing it.

5. Small credit/low interest is considered to be an important strategy in efforts to help alleviate poverty. So, the government, NGOs and other financial institutions should provide poor migrants with micro credit on easy terms and conditions. It is an important strategy to uplift their socio-economic condition. Micro-credit will help facilitate their start in employment, business establishment/self-employment.

6. There is an urgent need for overall improvement in the health situation of the migrants. Primary health care services should be made more easily accessible.

7. Public Health Services should also be expanded and improved. The role of NGOs and Government is essential to expedite this goal. Public Health Infrastructure should also improve with services for supplying latrines, tube-wells etc. Such services can be established in co-ordination with NGOs. Special motivation programs may be established to help improve cleanliness and health care.

8. Social security measures should be taken up by the Government in the cases of discrimination and inequalities.

9. Migrant women are involved mostly in income generating sectors for survival. They face some familial, social and occupational problems. Of the occupational problems hard labor, unsatisfactory working environment, unsatisfactory salary, lack of skill, low influence and promotion opportunities are of paramount importance. Therefore particular attention should be paid to the needs of working women.
Future Direction

To observe the change in livelihood pattern of internal migrants in Dhaka city it is necessary to cover more area and more diversified migrant groups. Also to get the real picture it is necessary to get information regarding the migrants’ origin. Moreover, for greater precision it is necessary to determine the real impact of internal migration, why and how observed changes are occurring, the impact of greater income on required livelihood changes, the exact proportions of expenditures, health status of the migrants, available space for living, family planning practices, GO and NGO activities, the local law and order situation, the effects of change on migrant sense of origin and culture, actual migrant satisfaction with post migration conditions, what should be included in policies designed to assist migrants, etc. Any future studies that may be conducted on this topic should consider these issues as a necessary basis.

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LOST IN SPACE?
INDIVIDUALS AND COMMUNITIES
TOWARDS GLOBAL MIGRATIONS:
RECONSTRUCTING SOCIAL COHESION AND CAPITAL

INTRODUCTION

The presented text contains partial results of the author’s research on the conditions of social integration of immigrants and refugees in post-modern societies. The research, partly funded by the Kosciuszko Foundation, was carried out in the paradigm of grounded theory in Central California in the years 1994-2012. For the needs of the research design the grounded theories method was adopted including the individual cases study (observation, interview, biography analysis, document analysis), as well as cross-reference method with a survey instrument. The research sample consisted of 137 Polish immigrants of the 1981-2000 period (59 males and 78 females) of vocational, high-school and college education.

HOMO VIATOR

Migrations belong to the eternal experience of humans in their history. Wandering and journey are the symbols of the human fate, while ancient archetypes present the wanderer as a deity, an envoy, an immigrant, a refugee, a merchant or an invader. The generalized image of the Unknown correlates the attributes of divinity and danger. The divine element is the derivative of the mysterious – knowledge, skills and experiences different from the those shared by the local community and potentially able to enrich it. That potential however, can be seen as a threat by means of the hostile intentions of the newcomers, or what they bring with them or what follows.
The images of migrations as the drama of the Great Unknown revealing in their consecutive acts the elements of temptation, liberation, threat, opportunity, salvation and destruction are present in the collective memory, what we can glean in the Greek myths, for example.

The Argonauts are venturing into the unknown lands, in order to wrench the Golden Fleese from the dragon’s watch. Odyseus and his companions find their fate far from home, navigating unchartered waters and manuvering between Scyllis and Charybdis and fending off the voices of the Sirens tempting them to perdition. All of this in order to make it home safely in the end. Medea meets the fate of a woman who is a Stranger and a Fearsome Being. Lonely, cheated and rejected she finally transforms into a demonic Witch – that means a person that is a projection of her hosts by committing a gory revenge.

The symbolism of the journey is also present in the folklore tales. The trip is there both the change and the challenge, full of threats transition from the world of Well Known to the Unknown, offering at its cross-roads an opportunity, refuge or death. This way the category of crossroads becomes particularly significant in the process of migration, since the path chosen determines the future fate of the wanderer.

As a result of the above mentioned images the attitudes of both the wanderers and the hosts are characterized with eternal ambivalence, fear and hope. The archetype of Host Society oscillates between the asylum, friendly oasis, the house of oppression and slavery and the terrifying abyss. Eternal expectations of the newcomers contain both the elements of hope and fear. And - shaped by the experiences of generations - these images maintain their power also in the period of contemporary global migrations.

**STRANGERS AT OUR GATES: HOST SOCIETY ON THE CROSS-ROADS**

Intercultural migration creates numerous cultural borderlands characterized with the co-existence, contacts and interactions of groups and individuals of various cultural backgrounds. In these borderlands there occur processes of mutual adaptation and acculturation of the participants, as well as cultural diffusion stimulating changes in the cultural milieu and the way both the migrant and the
host society function. The effect of the above is the emergence of the multicultu-
ral social space, in which along with the common for all collective mainstream
culture there appear numerous varieties of ethnic cultures evolving in their mu-
tual relationships.

Pluralism, hybridization and dialogicality of that space are not contributing to
the sense of transparency of the rules of social life, thus generating the sense of
loss and normative chaos defined by Brittain in the homelessness category. The
components of that condition can be found in the sense of disappearance of
cultural framework which synchronizes life styles and provides coherence to
the lives of groups and individuals; as well as destabilization, uprooting and the
breakdown of social bonds resulting in diminishing clarity of rules, meanings
and symbols. It is also accompanied by the disorientation resulting from the
clash and collapse of the worldview systems as well as breakdown of identity
structures of the groups and individuals. Those feelings occur both in the mi-
grants and the host societies, creating barriers to their integration. The ability to
overcome those barriers as well as transformation of the culturally heterogene-
ous collectivity into a trusting one and capable of harmonious cooperation com-
munity of citizens depends on the factors related to the both parties of the above
mentioned relation.

One of those factors is the ability to cope with the experience of culture shock
generated by the contact with cultural diversity. That phenomenon has been de-
scribed in the reference to the migrants settling outside of their civilizational
milieu.(Oberg, 1960). But it is conceivable that it also affects the representatives
of the host society in the early stages of contacts with the representatives of
other cultures arriving in their country. The basic elements of that relationship
include the lack of understanding, incompetence and discomfort in the direct
contacts with the representatives of the alien culture as well as dislike, hostility
and rejection of that culture. Defense mechanisms display tendencies to idealize
and the in-group’s culture against the stranger/out-group’s culture perceived as
a threat, hence the appearance of the activities protecting the host cultural iden-
tity.

In the group of factors related to the country of settlement an essential role is
played by the social and immigration policy of the country, as well as the atti-
tudes towards the incoming immigrants and refugees. Each country has a right to carry out its own migration policy defining the possibilities and conditions of the settling of migrants, their access to labor market and social support. Through the establishment of the incentives and limitations the state supports integration or marginalization and exclusion processes. The adopted solutions spring out of the visions of desired social order and host society needs as well as expectations directed at the migrants and representatives of other cultures. We have to add that the mentioned solutions often reflect and address historical experience, post-memory, stereotypes, prejudice and fears rather than adequate images and needs.

The image of the the newcomers perceived as a threat to the security, economy and cultural identity of the host society results in the tendency to formulate the ‘besieged stronghold’ strategy, limiting the possibilities of settling in the whole territory of the country. Concentration solely on the needs of the expanding or contracting labor market contributes to the marginalization of the migrants through the reduction of ‘the persona’ to the depersonalized category of ‘labor force’ perceived through the filter of utter utilitarianism. The area of confusion can be found even in the policy deriving from the humanistic set of values, generally friendly towards immigrants and promoting activities aiming at their welfare and integration but undecided or incoherent in respect to the range of action and the means adopted.

Incoherence and the sense of being lost can result also from the adopted approach. Excessive restrictiveness and rigidity are a threat to the needs of social and economic development, contributing to the increase of poverty and social exclusion and stimulating the growth of crime as well as social conflicts and pathologies. Solutions apparently friendly towards the immigrants also have negative side effects. Excessive care generates the attitudes of learned dependence and entitlement. Affirmative action (sometimes called positive discrimination) leads to the petrification of racial and ethnic divisions, emergence of tension in the inter-group relations as well as it may offend or demoralize the representatives of the privileged party. Bilingual education with the minority language of instruction favors marginalization and continuation of the low status resulting from poor command of the official language. The realization of the principle of political correctness collides with the right to freedom of ex-
pression, contributing to the erosion of the order based on the idea of Human Rights.

Areas of confusion can be identified also in the attitudes of the host society members towards immigrants and refugees. Those attitudes are shaped by many factors, and especially significant roles are played by the ethnic socialization including inter-generationally transferred images, phobias and prejudices against other ethnic groups, first contacts with migrants as well as the global and local media. Their interference creates fragmented, incoherent and conflicted images including stereotypes, ethnographic curios and terrifying sensations. In those images the pictures of exotic villages and temples are intertwined with images of crying children and women escaping the burning houses or the rows of uneducated strangers waiting in line for welfare money or low paid jobs. The boundaries of cultural diversity are presented as static and immovable. Moreover, the in-group cultural heritage acquires the rank of a static, historical deposit which has to be defended in order of the groups and collectives surviving.

Images defined that way are situated in the framework of expectations promoting diverse and exclusive visions of reality. The optimistic vision of the multicultural society seen as a soft, friendly and colorful rug woven on the fabric of civility is combined with the Manichean vision of the world in which the Good associated with Us/Hosts fights the Evil associated with Them/Aliens. The experts who sanction such images follow Huntington (1998), voicing his brilliant as well as poorly justified theses of the inevitable clash of civilizations. The catastrophic vision of the world and inevitability of cultural conflicts finds its outlet in sensation-hungry media, transforming the language of the populist politicians, incidental events and theoretical speculation into the ambivalent attitudes of combined apprehension, anxiety and curiosity. Unfavorable macro-social factors (such as political and military conflicts with the migrants’ home countries) and economic problems (unemployment, economic crises) stimulate the transition from ambivalence to distance, competition and hostility (Olzak, 1994). As the result the growth up of ethno-nationalism, racism, xenophobia, certain forms of discrimination and social exclusion as well as violent collective and individual actions may be observed (Bleszynska, 2006).
Following theoremats of Blau (1994) the social conflicts and tensions are more likely to be observed at societies and communities of the high level of diversity, mobility and social inequalities, and the low level of social cohesion and capital. And, research of Putnam (2004) on the transformation of social capital in multiethnic communities show the above mentioned features constitute postmodern diverse societies.

**WHO I AM AND WHERE DO I BELONG? LOST ON THE CROSS-ROADS OF THE MIGRATION TRAJECTORY**

Growing roots into the new society is a lengthy process, very harsh, stressful and full of pain. Its description utilizes categories of adaptation, acculturation and integration. And the each of those notions reveals a different aspect of the analyzed phenomenon. The adaptation category refers to the adjustment processes and mechanisms put in motion in response to the changes of environment and life conditions of the subject. Multiple dimensions and complexity of the occurring changes, challenges and tasks are the reason why adaptation behaviors include the reconstruction of the migrant’s existential foundations, development of abilities to deal with physical requirements of the new environment and the problems of adequate functioning in the community of different cultural and social make up.

The success of those efforts depends on the effective acculturation, which is based on the learning/acquiring a new culture and culture related competencies, development of the ability to function in its scope and transformation of structures and contents of the migrant’s social and cultural identity. The structure of the acculturation processes is of a phase nature and runs from a short-term admiration of the discovered diversity through culture shock and associated with it sense of disorientation, inadequacy, hostility and rejection of that diversity until the increase in the understanding of it, acceptation and the sense of competence and adjustment of the migrant to the new conditions takes root (Oberg, 1960). Following Berry (1990) we distinguish four basic acculturation strategies: a) integration (accommodation resulting in a partial acceptance of the new country’s culture and transformation of the existing cultural identity), b) as-
similation (rejection of the existing cultural identity and adoption of the host country’s culture), c) separation (rejection of the host society’s culture and isolation in one’s own culture), d) marginalization (rejection of both the existing identity and the host country’s culture).

Following Landecker (1951), social integration is a multidimensional process covering various aspects of social cohesion. It aims to synchronize the axio-normative systems determining the way of group and individual functioning (normative integration), social time, life styles and role models (cultural integration), to master a common language system (communication integration) as well as to develop and support the ways and structures of social participation and cooperation (functional integration). The level and advancements in the social integration of migrants are associated with their life expansion resulting from the more or less successful dealing with existential, social and psychological problems of migration and defining the trajectory of the migrant career (table 1).

Table 1. Trajectory of the immigration career

<table>
<thead>
<tr>
<th>Problems and tasks</th>
<th>Existential</th>
<th>Social</th>
<th>Psychological</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Adaptation – ingrowing (up to acquire the right of permanent stay)</td>
<td>Adaptation to the new conditions, living quarters, livelihood, legalization of status, organization of everyday life, improvement in language skills</td>
<td>Organization of the contacts with the country of origin and diaspora, construction of basic social networks, dealing with everyday family problems</td>
<td>Culture shock, psychological tensions, the sense of opportunity and threat, internal mobilization, development of the basis of cultural competence</td>
</tr>
<tr>
<td>II. Integration and stabilization of status</td>
<td>Improvement of the economic and existential conditions, development of qualifications, securing of the status, dealing with the family problems, taking care of health conditions</td>
<td>Expansion of the social networks, decisions on the participation in the life of the diaspora and local society, introduction into the institutions of the host society</td>
<td>The growth of cultural competences, attempts to self realization, the sense of limitation and discrimination, solving of the emerging conflicts, reconstruction of identity structures, the sense of uprooting from the old country, disturbances of mental health.</td>
</tr>
</tbody>
</table>
### III. Taking roots and growth/stabilization of the migrant’s life

| Development, aspiration to achieve higher status or life stabilization, health problems, securing the future | Decisions on social and political participation, strengthening of social status | Reconstruction of identity structures and the sense of importance, the pressure of achievement, evaluation of the migration and life success |

### IV. Withdrawal and the potential return migration

| Withdrawal from social life, organization of resettlement | Loosening of local bonds, potential activities for reintegration with the society of origin | The sense of relief versus defeat/shame, mourning of loss, fear and the shock of return, problems with re-acculturation |

A critical role in the course of the immigrant career is played by the growing phase which is the period of creating multidimensional bonds and building social capital in the host country. It initiates the most important changes in the life of immigrant: the physical and psychological transitions from the society of origin to the new one. In that period the migrant faces needs to apprehend the new conditions, acquire job, living quarters and at least minimal conditions of social security for oneself and his/her family, to reorganize of everyday life, to develop cultural competence as well as to reconstruct relations with other people. The sense of threat occurring in this stage generates a strong need of affiliation causing an urgency to develop relations with the basic structures of social relations such as relatives and friends, diaspora community and local community (Bleszynska, Szopski, 2009).

The set of migrant’s social affiliations and identifications plays the crucial role in reconstruction of his/her self-image and self-esteem collapsed due to the changes in the migrant’s life. One of the basic conditions of a such reconstruction is the identification with the reference group of a positive social image and identity. In the diverse societies such images are related to the racial, ethnic, religious or cultural differences and stratification. Its consequence may entail ascription of negative collective identities to certain groups and emergence of discriminatory and socially exclusionary activities towards their members. In response the discredited groups and individuals apply compensative strategies enabling to construct the positive image (Malewska-Peyre, 2001).

The above mentioned strategies may be analyzed at least in three dimensions: organization of action (collective versus individual), the direction of action (corrective versus defensive) and the applied level of social participation (inte-
igration versus isolation). Individual activities are taken by individuals, while collective action mobilizes groups. Corrective strategies, such as affirming the group’s culture, aim at the positive change of the collective image. Defensive strategies may take a two-pronged form. One of them is an intra-psychic manipulation reinforcing the positive self-esteem by blocking, transforming or suppressing the information threatening the positive image of the group or by selecting the areas and criteria of group comparison and evaluation allowing for the boosting of the in-group image at the expense of the out-groups evaluation. The other one – active intervention (legal or violent) against the sources and contents perceived as threatening ones.

The problems of construing a positive identity in the conditions of the social depreciation may be solved also by the management of the level of integration of groups or individuals with the host society. Strategies aiming to integration motivate subjects to social participation and bind them with the community increasing the level of their social acceptance and positive image as well as their ability to social climbing. Isolation strategies contribute to the development of ethnic inner cities allowing their residents preservation of the traditional life style developed in the society of origin and in this way providing shelter against unfriendly reality and assumed threats from the host society. Conditions of life and functioning within such the enclaves (isolation, a low social status, frequent poverty and relative deprivation, specificity of socialization patterns and contents, high level of pathologies, organized crimes, the perceived lack of chance for the better future) create the feeling of rejection, social exclusion and oppression (Lewis, 1962; Whyte, 1993) acting in favor of arise and development of aggressive ideas, groups and social movements as well as the formation of the gang/sectarian/rebel/warrior identity inducing the commitment to apply organized crimes, terror and violence (Chouvier, 1980; Weinreich, 1983).

The category at a high risk of the above mentioned social isolation, spoiled identity and behavioral disorders are refugees suffering from their traumatic experience. They are entrapped between requirements and conditions of the host society and the areas of unresolved and painful memories making it difficult for them to find their place in the new reality. Their temporary status on the territory of a new country as well as numerous legal restrictions applied to them neither encourage nor support their social integration. The state of isolation and
uncertainty interferes stress of acculturation and symptoms of the post-traumatic stress disorder, and results in cumulating and overlaying tensions generated both by the past as well as the present problems. Unless treated the above interferences may develop serious health problems or destructive behaviors harmful or even danger to the refugee, his/her relatives or the people in his/her social vicinity.

CONCLUSIONS

Summing things up it must be stated that intercultural migrations generate conditions of indeterminacy, lack of clarity, anxiety and disorientation in both the immigrants and the host societies, hindering the integration and mutual adaptation processes. Spontaneous attempts to cope with those challenges by the subject do not necessarily produce constructive solutions, resulting quite often in the phenomena of pathological and dangerous nature. Reflexion on those problems and the potential of their solution tends to lean towards solution of comprehensive nature including the work with all the participants of the integration process. It is urgent and necessary to work out a cohesive integration policy protecting migrating persons from social exclusion and isolation within the ethnic inner cities. The activities undertaken towards immigrants should support acculturation processes, social participation and civic behavior with particular emphasis placed on the development of the positive bi- or multi-cultural identity as well as competences allowing for intergroup social networks of migrants development. The activities addressed to the host society should enhance the openness and acceptance of people of diverse cultures, encourage inclusion of those people into the social structures as well as increase the intercultural competence of the employees of agencies responsible for work with immigrants and refugees. The key role in such activities should be played by the policies and agencies responsible for education, counseling, social work, social animation and crisis intervention.

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CARROTONS ABOUT GLIWICE – THE VISUALIZATION OF HISTORY IN THE EDUCATIONAL PROCESSES OF CREATING THE BONDS WITH A PLACE

A historical cartoon is a separate kind of a graphic novel\(^1\), which tells us about the past events. There are usually two ways of telling those stories: either faithfully reflecting the past (source cartoon) or treating the past only as a background for the shaping of characters and legendary or fictional threads of the plot\(^2\). There was a noticeable increase of interest in this kind of art on Polish publishing market in the last decade\(^3\). What is characteristic about this genre, beside the cartoons taking up themes from general history, is that there are more and more picture stories taking up regional topics. Subsequent Polish cities are joining a circle of those which are promoting themselves by the publishing of the historical cartoons about the local history, among them are: Płock, Jelenia Góra, Biała Podlaska, Bydgoszcz, Warszawa (Warsaw), Opole. Popularity of the comic strip visions of history is a consequence of the fact that there was noticed the unique potential of cartoon genre as a modern medium, which can arouse the interest of a wider audience of different ages. This genre perfectly fits the contemporary image culture and at the same time it manages to accomplish the pragmatic aim as a platform used for spreading the educational contents\(^4\).

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1 Graphic novels are similar to comic books because they use sequential art to tell a story but it’s necessary to emphasize that they treat plots and themes with the depth and subtlety unlike, trifling a bit, comics. Graphic novels can be fiction, non-fiction, history, fantasy, or anything in-between. As J. Spencer Clark claims: „A cousin of comic strips, a graphic novel is a story told in comic book format with a beginning, middle, and end. Graphic novels also include bound books conveying nonfiction information in comic book format”, see J. Spencer Clark, Encounters with Historical Agency: The Value of Nonfiction Graphic Novels in the Classroom, „The History Teacher”46, no 4/2013, p. 491 http://www.societyforhistoryeducation.org/pdfs/A13_Clark.pdf (03.12.2014). Compare B. Kurc, Komiks. Opowiadanie obrazem, Łódź 2003, p. 9-10.


4 Using graphic novel to teach history is didactic strategy which is valuable and more and more popular in the West, see H. Frey, B. Noys, History in the Graphic Novel, „Rethinking History” 6, no. 3/2002, pp.
To what extent can the visualization of the local history in the cartoon go beyond the concrete plot of interesting cartoon about a city and inspire the creation of more complex relations of a young man with a place? How is it possible that the story set in one’s place of residence, which tells its history with the help of comic strips, can give a greater sense of local identity? Those issues are still relevant in terms of negative effects of loosening of the anthropological bonds of an individual with a given place of residence. That was the result of the processes of modern world deterritorialization and the expansion of audiovisual media which cause the disintegration of cultural identity and at the same time increase such well-known problems as alienation and loosening one’s national identity.

A good example of the historical cartoon which gives the possibility to create the bonds with a place through the school education can be the anthology: Niczego sobie. Komiksy o mieście Gliwice, which was published by the Museum in Gliwice in 2012\(^5\). It consists of eight short forms called ‘shorts’, and each of them was inspired by some important event from the history of the city. The anthology dates from the times of the Middle Ages down to March 1968. These are not the ‘source’ cartoons, but rather stories that constitute loose interpretations of historical facts, in which documented events are interwoven with legendary motifs and sometimes with complete fiction. The aim of the authors is not passing on the academic knowledge, but rather ‘drawing the attention of readers, especially young ones, to the interesting past of the city and to encourage them to study it’.

One of the most interesting works in this book is the cartoon created by Mikołaj Ratka titled: Człowiek z żeliwa (A Man of Cast Iron)\(^6\). The background for this story are the beginnings of the industrialization in Gliwice. This started on the verge of modern times by introducing the techniques used in English mining and smelting industries. It was possible thanks to the two of eminent pioneers of these new technologies, namely John Baildon and Friedrich Wilhelm von

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\(^6\) M. Ratka, Człowiek z żeliwa, ibidem, pp. 50-63.
Reden. The Industrial Revolution in the area of Upper Silesia began when those two pioneers introduced a coke-fired blast furnace in the production of pig iron. The first blast furnace was started in 1796 in Gliwice in its new Royal Iron Foundry, which can be regarded as the symbolic beginning of the industrialization process of the Upper Silesia. In the course of the next years the factory was at the forefront not only in terms of its size, but also the quality of the production as well as the applied technologies. In 1798 there was created a separate art department of the factory – producing artistic iron casting – the goods which were known in the whole Europe.

On the basis of this part of history was created a cartoon plot in which two 19\textsuperscript{th}-century pattern-makers Otton Giesser and Karl Meine – foundry workers in Gliwice, in a symbolic way, shared their lot, because of a cast iron figurine. The course of life of the first character is connected with the period of the Napoleonic wars which in the history of the foundry was marked by prosperity, because of the fact that the whole production output was send to Prussian Army. Then the young Otto Giesser manufactured one thousand handmade cannonballs filling the residents of Gliwice with admiration. In the post-war period was revealed his artistic talent– he had been making unique cast-iron jewellery. Soon the boy met Wilhelmina - the daughter of a rich Silesian industrialist Bellestrem. They fell in love with each other and wanted to get married. Her father didn’t agree, because he planned to marry his daughter off, but he chose for her other industrial tycoon. He didn’t allow them to meet and finally Otton was dismissed from his job in the foundry. Wilhelmina killed herself out of despair, she threw herself into a smelting furnace. He tried to save his beloved, but it cost him suffering severe burns and spending the rest of his life in solitude.

The second character is Karl Meine, whom a reader get to know circa 1868, then he was around 10 years old. The boy met a mysterious character on the street - a local freak called ‘a man of cast iron’, who for Karl seemed to be an interesting individual and also there could be felt the atmosphere of uncanniness surrounding the man. He followed him to the cemetery and then he came in an old tenement house, in which in one of the rooms he found an enigmatic cast iron figurine of – a couple of lovers. He took the figurine and run away. This mysterious figurine, which is associated with the local iron products and their performer – Otton Giesser, became an inspiration for the later fate of Karl
Meine.

At first we need to take into account the type of narration. The main character is Karl Meine and the whole story is told from the perspective of a child that influenced by the local legend became interested in the history of his town. The main elements of the story are the tenement house haunted by the demon and the mysterious character of the former foundry worker, then still presented as a freak - called ‘a man of cast iron’. The urban legend is not only the background of the story creating the atmosphere, but it is actually the axis of events. The story heard by the boy and the figurine that was found in the old tenement changed the life of the main character. Karl decided to leave his family home and to set off on a journey to Berlin, where he wanted to study to become a pattern-maker. After 20 years he returned to his home town planning to settle permanently and to contribute to the revival of the local artistic-industrial tradition. The legend about Otton Giesser is actually the legend within the realm of another legend, because the cartoon plot about Karl Meine construed by Mikołaj Ratka has all characteristics of this literary genre.

### Historical elements:
- The foundation of the Royal Iron Foundry in Gliwice in 1796, its development and reputation,\(^7\)
- The creation of a separate art department of the factory – producing artistic iron casting in the foundry in the years 1797-98,\(^8\)
- The periods of prosperity and recession on the market for smelting products (the heyday of the factory was in 1813),\(^9\)
- Characters: Karl Meine – the pattern-maker in the foundry in Gliwice and the Bellestrem family – industrial tycoons in the Upper Silesia,
- Setting-up a metallurgical cemetery in Gliwice in the early part of 19th century.\(^{10}\)

### Fictional elements:
- Realistic:
  - Characters: Otton Giesser, Wilhelmina Bellestrem,
  - A love interest – romance between the two young people and the tragedy resulting from that love.
- Fantasy:
  - Tenement haunted by ghosts,
  - Devil that appears in the city,
  - A man of cast iron.

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\(^8\) Ibidem.


As far as the communications aspect of the work is concerned, the story constructed in such a way functions as the local cultural transmission and became a legend itself revealing to a reader the real parts of history and adding fictional details. The period of industrialization was marked by the incorporation into Prussia and then into Germany thus the past of the city is presented in the cartoon as multicultural one. The influence of the German culture is reflected on different levels: iconographically, in the historical background for the events, and also on linguistic level (humorous dialogues in German language). I need to add that in this work is also emphasized the regional culture noticeable both in the visual (industrial urban landscape typical for the Upper Silesia) and in the linguistic parts (non-standard dialogues).

The idea of telling the legend within the realm of another legend makes a reader think about the historical aspects including the complex problems concerning the allegorical nature of the history such as: individual/collective memory, remembering/forgetting, historical truth/myths, which are explained in greater detail in the work written by a French philosopher Paul Ricoeur titled ‘Pamięć, historia, zapomnienie’ (‘Memory, history, oblivion’)\(^\text{11}\). In this sense, the cartoon presents the process of creation of a legend – different types of memory overlap each other creating specific layers in the course of time, and the elements of history, fiction and fantasy are mixed during the process of fictionalization. While taking into account the local identity, the academic knowledge about the history is not as important as putting the emphasis on the cultural heritage of the home town and this is the function of the main character. The author points in this way that there is a place important for every individual. Thus a reader realizes that the story heard by the boy in his home town had stimulated his relations with the local community. It is the communication between generations that results in the elevation of the point of view and fate of ‘an ordinary man’, in which is comprised the cultural tradition of a region.

The plot structure and the iconographical level in the cartoon created by Mikołaj Ratka seems to be equally interesting. You need to take into account that the aspects of the iconographical representation of the history are always problematic for the researchers of the past, because as Paul Ricoeur defined it – ‘it is

the picture of no longer existing thing’, and ‘the non-existing thing split into vanishing and existing in the past’. It has specific consequences in terms of the semiotics of the cartoon illustrations. The symbols of which consists the image of the past are here often incomplete. There exists a graphic image of an item (meaningful), however the thing it refers to (marked) is difficult or even impossible to identify, because some parts of the former urban development plan no longer exist, and we can see them only on the old photographs.

Among the ‘full-size’ symbols referring to the existing parts of the city, which constitute some kind of its reproduction, are: the tenement – the building existing till today located on the corner of Młyńska and Chopin streets; smelter cemetery – the oldest necropolis in Gliwice, a stretch of tenements at the today’s Plac Inwalidów (Handicapped Square). As the examples of the symbols, in which the marked element had been transformed in the course of history and the images of those buildings were reconstructed on the basis of old photographs, are ranked: the tower of the All Saints’ Church converted in the years 1929 – 42, the facilities of the former foundry, which during the post-war period started to function as a part of newly built Gliwickie Zakłady Urządzeń Technicznych (Technical Equipment Plant in Gliwice), the front door of the tenement. In the cartoon illustrations can also be found symbols of which meaningful items correspond to possible to locate marked items, however their context is changed thus the meaning alters too. The example of this type of symbol is visible on the painting presenting the panorama of the city dated back to 1860s (then the plot of the cartoon is set), namely the cathedral tower of the Church of Saint Apostles Peter and Paul that makes the image of urban landscape complete, and this image is characteristic till today, but it didn’t exist yet in those days (the church was built in 1899). Another example can be the gravestone of Wilhelmina Bellestrem, which is one of a few well preserved tombs on the smelter cemetery, but actually it is the gravestone of Theodor Kalide. On the drawings created by Mikołaj Ratka we can notice also another building, which was well-known in Gliwice in the past, no longer existing one, namely synagogue dated back to 1861. The square on which was located this building is empty since post-war times and is surrounded by a temporary wall, which hides

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12 Ibidem, p. 376.
remains of the former temple. Now there is only a commemorative plaque affixed in the façade of the adjacent building. This fragment of the cartoon for sure is not an empty symbol in terms of its message, quite the contrary, it seems to be even more meaningful, although it refers to something that disappeared from the surface of the earth.

From the above-mentioned reflections we can draw the following conclusions. First of all, we must ascertain that a visualization of the history in a cartoon is the interpretation of the events from the past, but it is only a conception of the past and not an objective account, as Alyson E. King claims: ‘by using graphic histories teachers and students can reconsider how history is both represented and interpreted’\(^\text{13}\). The visualization has both the narrative aims – the creation of the plot and thus the event chains, and iconographical ones – namely the depiction of a specific historical setting. This is not a drawback in terms of creating a local identity of the youth, because more important than passing on the academic knowledge is drawing readers’ attention to the value of the local story.

We can treat the cartoon genre as an example of an entertainment medium taking into account mainly the theme of the adventure. However, we can also read it just as a rebus we need to solve, and what is most important, the work encourages a reader to do that. Active reading is essential while decoding the hidden message of the cartoon. Firstly, the cartoon encourages to decode the symbols and visualize the topography of a specific urban setting – it enables a reader to play hare and hounds on a street in Gliwice and walk around the Old Town, just as if a cartoon was a plan of a resistance fighter, tracing the buildings presented on the illustrations. Secondly, the legendary thread of the plot encourages to become interested in the history and to verify information from the cartoon on the basis of other sources.

Most important questions that need to be responded are: Whom was Karl Meine? The answer is: he is a real person – an able pattern-maker working in the foundry, one of the artists that contributed to the revival of the production of artistic casts, his name can be found in historical sources on the list of the foundry employees in the year 1888\(^\text{14}\). Whom was Wilhelmina Bellestrem and

\(^{13}\) A. E. King, *Cartooning History: Canada’s Stories in Graphic Novels…*, p. 216.

her cruel father? Taking into account the dates mentioned in the text, it is Karol Franciszek von Ballestrem, the representative of the aristocratic families of Silesian industrialists, who had lived in the years 1750-1822, but he did not have a daughter named Wilhelmina so this character is fictional one\(^{15}\). When is the action of the cartoon set? Taking into account the period of the Napoleonic wars, which in the history of the foundry was marked by prosperity, which is presented in flashback, and other facts: the job of Karl Meine in the foundry, which is documented in the year 1888, the view on the panorama of the city with the synagogue, which according to the local sources was dated back to 1861, finally, taking into account time sequence in the plot, we can say that it was approximately the year 1868.

The historical cartoon can be regarded as an exceptionally effective way of teaching provided that it will be a well-thought-out tool in the hands of a teacher, and a child won’t be left with it alone\(^{16}\). It should be used together with other materials: dictionaries of historical terms, tables, maps, calendars, source texts, the memoirs of the witnesses, archive photographs, scientific articles etc., which help to verify information in the cartoon.

The cartoon enables pupils to active learning, but a teacher needs to go with them out of a classroom and commit himself to the activities connected to discovering, penetrating, searching, but also translating, creating and fictionalizing of the past of a place close to our hearts (home town). Generally speaking, in the course of the cognitive processes and creative activity it is essential to change the world, break the stereotypes and patterns of thoughts about the past.

Summing up, it is worth adding that in educational activities with the use of the cartoon genre, those which take up the issue of local identity, although of course at this point essential is the issue of a sort of retelling of the past, the main aim is not to completely change the history, telling the new more appropriate version, eliminating the metanarration techniques and making it the sole conception of the past. This temptation is also true in contemporary times, especially

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\(^{16}\) J. Spencer Clark believes even that graphic novels can be valuable as a teaching tool only „at the secondary and college levels because they present historical agency in multiple ways that disrupt tradition historical narratives”, see J. Spencer Clark, *Encounters with Historical Agency: The Value of Nonfiction Graphic Novels in the Classroom*…, p. 504. http://www.societyforhistoryeducation.org/pdfs/A13_Clark.pdf (dostępność 03.12.2014).
on the areas such as Gliwice, located in the past on the borderland, of which culture seems to be not a coherent heritage, but the amalgamation of different languages, memoirs and conceptions. However, the aim of the historical didactic should not be insisting on the specific conceptions. It is the hermeneutics of memory in the spirit of Paul Ricoeur that is applicable in this case: common, creative gathering of knowledge about a place, taking into account different point of views and sources, searching for mutual characteristics resulting in the collecting of historical knowledge in the spirit of respect for a place.

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III. INNOVATIONS
HIGH TECH
INDUSTRIES
Rifat ABEDIN

TRANSFORMING GOVERNMENT PROCESSES: REFLECTIONS ON THE HIGH SECURITY DRIVING LICENSE PROJECT OF BANGLADESH

INTRODUCTION

Governments in both developed and developing countries are introducing identification management systems to improve their service relationships with citizens (Lips, 2009). The concept of electronic identity (or e-ID) is receiving paramount importance by governments across the world (Lips, 2008; Mariën and van Audenhove, 2010; Grönlund, 2010; Rissanen, 2010). Traditional and paper based identifications are being replaced with sophisticated highly secure ID cards with safety features incorporated in several layers (Lips, 2008). According to Lips (2009), these systems will offer enhanced citizen convenience, empowerment and trust along with efficiency and effectiveness of public service provision, public safety and security. Europe was one of the first to start the process and for example, with the year 2008 e-ID solutions were issues to more than 22.5 million citizens (Collings, 2008). The EU Member States are investing tens of billions of euros in interoperable electronic identity management (eIDM) and e-ID is considered an important initiative in the implementation of e-services and transformation of the government processes (European Commission, 2010).

Following the path of the developed nations, Bangladesh is also fully immersed in implementing identity management projects. In 2002, the country adopted its first national information and communication technology (ICT) policy which covered policies related to e-governance and ICT for development. “Digital Bangladesh by 2021” was a resolution by the Bangladesh Awami League for the 9th Parliamentary Election in 2008 (Digital Bangladesh Concept Note, 2009). The ICT policy was revised in 2009 with specific directions and guidelines reflecting the priorities of the Digital Bangladesh agenda. The government
has implemented numerous biometric and identity management projects such as National ID, Machine Readable Passports, Driving Licenses, Criminal Databases and so forth. Just like many developed nations, the citizens of Bangladesh now have sophisticated chip-based driving licenses, vehicle ownership cards, machine-readable passports and radio frequency identification (RFID) stickers on their vehicles for tracking and monitoring purposes.

The largest ICT initiative in Bangladesh to date was the Voter Registration Project of 2008. It was the first time that the citizens of Bangladesh obtained and used national ID cards with photographs and fingerprints. Over 80 million people and 320 million fingerprints were enrolled in 11 months. More than 20,000 personnel and over 8,000 laptop computers were involved and the initiative eliminated 12.7 million fake voters (TigerIT, 2011).

According to Lips (2009), identity management systems not only enable the transformation of government but also enable them to improve its service-providing facilities to the citizens. E-government is not just about having a website, email facility or doing transactions over the Internet, it is also about transparency, efficiency and accountability (Mohammad et al., 2009). Developing, executing and managing such large-scale national projects require significant technical expertise, coordination among different stakeholders and resources for the successful implementation of the project (Melin et al., 2013). It is important to understand how such projects are implemented and what is required for them to succeed (Heeks and Stanforth, 2007; Melin and Axelsson, 2009).

Each nation has requirements specific to its conditions and processes and the challenges faced can also be unique. For example in Belgium when the e-ID was introduced, the idea of including biometrics was rejected by all stakeholders, one reason being political fear about the fact that the Belgian citizens would not approve of it (Mariën and van Audenhove, 2010). Nonetheless the implementation of the Belgian e-ID went smoothly as the country had had a long history of having ID cards. Prior literature on implementation of different e-government projects shows numerous challenges in developing countries, such as:

- Lack of proper resources (Rwangoga and Baryayetunga, 2007)
- Extensive corruption (Bhuiyan, 2010)
• Inefficiency in implementation and using ICT (Elsheikh et al., 2008)
• Lack of proper ICT infrastructure (Aman and Kasimin, 2011)
• Improper management and infrastructure development (Bhuiyan, 2010)
• Lack of ICT policies and guidelines along with privacy and security issues (Sang et al., 2009a)
• Digital divide (Adeyemo, 2011; Bhuiyan, 2010; Sang et al., 2009a) and high illiteracy rate (Sang et al., 2009b; Sinawong, 2008)
• Technological hurdles (Al-Rashidi, 2010; Elsheikh et al., 2008), lack of ICT training for employees (Al-Rashidi, 2010; El-Haddadeh et al., 2010)
• Prolonged power failures (Bhuiyan, 2010)
• Lack of competent staff (Aman and Kasimin, 2011; Bhuiyan, 2010)

According to Heeks and Bailur (2007), e-government projects are typically initiated for solving a pragmatic problem. The High Security Driving License project in Bangladesh was introduced with a few objectives in mind: reduce fake driving licenses, maintain international standards, bring about an efficient e-government system by restoring citizens’ trust and confidence in the road and transport authorities.

The Bangladesh Road Transport Authority (BRTA) has had a long history of corruption in the transportation sector. According to a report published by Transparency International Bangladesh (TIB) on BRTA, anyone can buy licenses by paying the officials. It is claimed that 61% of the licenses are obtained without tests (TIB, 2009). The consequences from this are unskilled drivers on the roads and highways across the country (TIB, 2009). Years of such practice have resulted in unsafe roads with high number of accidents and deaths. It is reported that there are 1.24 million deaths annually because of accidents and another 20-50 million of people are injured (New Age, 2014).

The High Security Driving License project was implemented to combat corruption, increase revenues of the authority and bring about greater control and transparency in the license issuing process. While many of the challenges for a developing country listed above are also common in Bangladesh, the driving license project faced a unique set of circumstances. This paper talks about those
challenges and how they were overcome. It also sheds light on further improvements of the existing processes. The remainder of the paper is organized in the following sections: the second section describes the methodology used, the third section explains in details the findings and challenges of the driving license project and the final section draws recommendations based on other e-government initiatives.

METHODOLOGY

The study is based on data obtained through case study research. This approach is taken as it allows for in-depth analysis of the project (Pettigrew and Roberts, 2011) through interviews with project staff, analysis of project reports, observations and personal experience of the researcher. In-depth interviews with four project staff were carried out and a variety of literature was studied to draw the recommendations presented. A significant primary source of data includes the personal experience of the researcher who was involved in the capacity of Project Coordinator of the driving license project. The personal interaction of the researcher directly with citizens, government officials, field level- and project management staff has given a holistic view in understanding the project, including its challenges and success factors as well as the thoughts of the people affected.

FINDINGS

In 2011 the BRTA undertook the project to replace the plastic driver’s license card with a sophisticated chip-based card that is a polycarbonate ISO 7816 form factor type smartcard with several physical security features, including laser engraving, guilloche and rainbow-colour printing, amongst others. As per the procurement guidelines of the government, a tender was issued that allowed local and foreign vendors to bid. The contract was awarded to the bidder who offered the best solution and price and was also compliant with all requirements of the tender. TigerIT Bangladesh Ltd., a local software company which also
had the experience of developing the National ID and Voter Registration solution in 2008, was awarded this project as the software partner and card supplier. The cards were obtained from a European manufacturer.

At the time of writing, a total of 700,000 cards have already been issued to professional and non-professional drivers. An average of 20,000 cards is printed per month at the data center. Enrolment of the citizens is done in the different districts of the nation. Both demographic and biometric information is captured such as name, date of birth, address, contacts, photograph, fingerprints, and digital signature. The card is valid for ten years after which a replacement is issued upon application.

There are two types of driver’s licenses – professional and non-professional. The process of obtaining a license is as follows. An applicant first fills out and lodges a paper application form. The form was newly designed for this project and supports intelligent character recognition (ICR\(^\text{1}\)), is available at BRTA offices or can be downloaded from their website. There are approximately forty fields in the application form. The applicant specifies what type of license she or he is applying for, e.g. new or renewal, and for what vehicle type. Based on the application type the applicant next pays the required fee at a designated bank which issues a receipt upon payment. This receipt is submitted to BRTA as a proof of payment along with the form and supporting documents, such as national ID, birth certificate, existing driving license number, medical certificate etc.

The BRTA handles the written and practical tests for learners. If an applicant passes these tests, she or he can proceed to apply for a driver’s license. The BRTA enrolment officers capture the applicant’s biometric data, including photograph, signature and four fingerprints and enter the information from the application form into the system. The enrolment time per person at the BRTA sites is approximately seven minutes including capturing of the biometrics. The supporting documents are also scanned into the system. Once the entry is saved it goes through several levels of approval. It is proof checked and at the next level the applications are approved respectively by the additional and deputy director

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\(^{1}\) ICR is a handwriting recognition system which allows fonts and different styles of handwriting to be learned by a computer during processing. It is expected to improve accuracy and recognition levels.
of BRTA. Once an application has been approved it is ready for printing. The printing is done in batches at the data center and it takes maximum three days. A text message is sent to the applicant on his or her mobile phone when the license is ready for collection. A point to note is that after enrolling the citizens, their fingerprints are matched at the backend to see whether any duplicates exist.

The software and hardware were purchased through public procurement regulations. They include: a client enrolment application which captures demographic and biometric information about the license holders, middleware, database and storage, automated fingerprint identification system, card personalization and printing systems, and all respective hardware. Network connectivity is also ensured so that all offices in the country’s 64 districts are connected to the data center. The cards are produced centrally at the data center after which they are handed over to BRTA, the authority responsible for their distribution to the citizens.

The project was initially rolled out in two BRTA sites in Dhaka where the number of applicants was the highest. It gradually was deployed in other cities and now covers all 64 BRTA district offices.

As part of this project, law enforcement agencies such as the Bangladesh Police will also be equipped with handheld devices to read these cards. This will empower the traffic police on the road who will be able check and verify the identity of the cardholder by matching the fingerprints with those stored on the chip. These handheld devices also have the capability to connect to the central database and obtain the driver’s details.

The chip-based smart card driving license has the following features:

- It has a chip with data storage capacity of 32K which ensures the complete storage of citizen identification information in the card’s memory. This includes the driver’s photo, four fingerprints, digital signature and other information printed on the card.
- The chip has a processor which allows data security and is capable of performing encryption, thus ensuring secure transactions.
- The driving license utilizes some of the most advanced overt and covert
security printing technologies, including: rainbow printing, guilloches, micro-text, micro-line, optically variable ink, invisible UV fluorescent ink and iridescent ink among others.

The driver’s license solution is based on service-oriented architecture (SOA). A SOA approach to e-governance solutions supports scalability and interoperability reducing dependency on back-end systems (Behara et al., 2009; Oracle, 2010).

During the application process each applicant is required to visit a BRTA site for the enrolment of biometric information. At this point the enrolment staff also check and verify the person’s documents and the submitted proofs of evidence. After the enrolment is completed, a fingerprint matching is carried out for all fingerprints to ensure that there are no duplicates in the database. If duplicates are found, an adjudicator examines all relevant information, such as photos and demographic information, to make a decision whether the duplicate is real. There are three levels of approval by BRTA staff of each application. This ensures that a single staff is not responsible for the entire process. Each activity that is taken in the system is tracked and logged extensively with information such as name, date, and time.

The system is using a high-end commercially available off the shelf relational database management system which ensures secure storage of data in rest and transit. A virtual private network was established with the data center. Backup of the data is taken at regular intervals. The enrolment stations at some of the most crowded stations are staffed by IT personnel in charge for deploying the system. All data is stored in the database with extensive logging system to ensure traceability.

Even though most processes have been automated an extensive paper-based procedure still exists. The citizens need to fill out a paper form giving their details and supporting documents. The information in the paper-based form is entered into the system by the enrolment operators. At a later stage the form and supporting documents are scanned and stored as images with each record in the system. The written test for a learner’s license applicant has also not changed as no automation has been implemented in this area. On the day of the test a
candidate needs to queue in line to sit a written exam on paper. The candidates then need to wait at the premises to learn whether they have passed and whether they can give the practical test on the same day.

Numerous challenges were incurred during the implementation of this project. While some of them are common and described in prior literature on e-government implementation, the BRTA project did face its own unique set of challenges as follows:

- Resistance to change – while a handful of the senior staff were positive about the changes and new processes, there was resistance from numerous internal and external stakeholders. The technology implementer had to engage in extensive meetings and do presentations to all levels of staff (from top to field level) to show what the solution and the workflow are intended to be and the advantages this would bring. It took considerable effort to convince staff to adopt new processes with greater efficiency and transparency in their work. It also took considerable effort to get the designs approved and finalized as the different stakeholders had different opinions. For example, when the ICR form was designed the engineers had to meet with BRTA staff on numerous occasions to receive approval as they were not able to decide the extent of required information. The situation was similar in the approving of the card design and system workflow. The efforts however paid off and the will and determination of staff from both sides played a significant role in this.

- Resistance from ‘black marketers’ – the greatest resistance came from the ‘black marketers’ or more popularly known as ‘agents’ who operated at the BRTA sites but were not official BRTA or government staff. It is a custom to have such ‘agents’ in different government offices. They work independently and have links with field level government staff. By being around the sites they offer citizens different services such as bringing out the license quickly in return for certain amount of money. The money is usually split among all official and non-official staff involved. Many citizens often resorted to this kind of help to avoid long delays and queues. The implementation of the new system meant that these agents would lose their ‘business’ as it became compulsory for each individual to be present at BRTA with their form and supporting documents for verification and capturing of
the photo and fingerprints.

- Connectivity with all offices in the 64 districts – this is where the challenge of ICT infrastructure manifested. Although Bangladesh has significantly advanced in ICT infrastructure development, a few remote locations still remain problematic. The offices in these remote areas are not connected to the data center 24/7. To address this challenge an offline solution needed to be designed whereby the data can be stored in the local servers and after connectivity is established with the data center – transferred to the central database.

- Adherence to the rules by staff – BRTA has long been an organization afflicted with corruption at all levels. It could range from paying extra to get the job done quickly or using connections to avoid the long queues. In the previous practice it was common for people with the right connections to not even go to the offices to have the license issued. It just required a phone call to the right person. One of the greatest challenges was to bring about a change in these practices with the introduction of the new system. The implementer took every step and precaution to ensure that no favors are being taken from BRTA staff as it would be expected that the favor would be reciprocated. They supervised closely to ensure no illegal practices were occurring. The biggest challenge was to eliminate the age-old practices among staff and citizens to gain undue advantages through illegal means or through political power.

The system was initially designed to ensure that every card is printed on a first come first serve basis irrespective of a person’s status or position in society. So even if a member of the parliament needs a license s/he would have to wait in the queue for their turn in the capturing of biometrics. This was not welcomed by the influential sectors of society and a solution to include a VIP booth was developed to facilitate the capturing of information and biometrics of people classified as VIP.

- Project backlog – before rolling out the new project there were 100,000 paper-based forms that had to be entered manually into the system. This information was pending for almost a year as BRTA had stopped issuing new licenses prior awaiting the implementation of the new system. When BRTA handed these forms over to be entered into the system, they did not
have supporting documents such as national ID or medical certificate. When the new system was rolled out these citizens were asked to bring supporting documents and present for biometric collection. Many became furious and frustrated.

- Project rollout at BRTA sites – although there was some familiarity with BRTA’s culture, processes and style, nothing matched the challenge that was faced during the project rollout at the different sites. Handling 200-300 citizens per day at a single site and getting them to obey rules and guidelines (to which they were not used) was a massive challenge to overcome. For example, it took a while to get people accustomed to making a queue and waiting their number to be called. In many cases the actual citizen wouldn’t come but instead send over somebody else (e.g. an employee) to complete the formalities. A lot of these day-to-day problems were not anticipated in advance and new processes had to be designed to solve problems as they occurred.

- Security of the implementer staff – because of the major changes the new system brought about in how the driving license is issued, there was fear of vandalism and violence against the technology and associated people; there was also fear for their security. Security personnel were hired to guard the premises and the equipment.

- Lack of proper awareness programs – the new license issuing process brought about numerous changes to the previous practices. The BRTA did not undertake enough awareness programs to let the citizens know about the new driving license and the steps that needed to be taken to obtain it. There was also not enough information on the website. Citizens coming to BRTA offices would struggle trying to find the right information and the correct steps with little help from staff. Although public awareness campaigns were never undertaken, BRTA gradually made the procedures and steps available in big boards at its premises. The rollout would have been much smoother if these awareness programs were made available from the beginning.

- Increase in human resources – the amount of human resources required for this project was underestimated. In the initial stages of the project rollout
the enrollment operators were responsible for entering the data in the system, doing proof reading and scanning all documents at the end of the day. This did not prove to be a feasible solution as it put too much pressure on the enrollment staff. The daily target of at least 200 applications was not achieved and the waiting times for citizens were longer. As a result they decided to segregate the responsibilities by hiring additional staff, of which one group was specifically designated for proof reading and data entry while another was doing the biometric capture. This allowed more applications per day to be processed.

All challenges were related to project implementation in terms of managing people and changing old practices most of which could not be anticipated beforehand and solutions were designed based on experience. Interestingly, IT infrastructure or technological hurdles were not an issue. The citizens of Bangladesh were also not concerned about privacy or security. Their expectations were simple. They wanted to get out of the vicious cycle of corruption and obtain a driver’s license without any hassle.

**DISCUSSION AND RECOMMENDATIONS**

According to Gil-García and Pardo (2005) technology provides two main avenues for government: (1) increased operational efficiency resulting in cost reduction and increased productivity; and (2) improved quality of services for citizens. E-governance projects are implemented with several objectives in mind (Behara et al., 2009):

- Improvement of government service delivery
- Improving relationship between government and citizens
- Achieving greater transparency and accountability
- Empowering citizens by giving them greater access to information.

The BRTA staff took steps in this regard with the vision and planning of this project and to avoid leading to failure shortfalls. Even though there was re-
sistance at numerous ends about the adaptation of the technology and automation, a few of the staff were adamant to bring about the much needed and long awaited change. They were seeking a change that would reduce corruption and revenue losses, and bring about strict control and transparency in the license issuing process. The BRTA’s engineering team took ownership of the project by offering support during its implementation remaining clear about their vision and goals. By designing the system in a collaborative approach the best possible workflow was determined to ensure efficiency and transparency.

According to previous studies by Gil-Garcia and Pardo (2005) and Ho and Pardo (2004) on successful e-government strategies, the critical success factors include top management commitment, project linkage to business, technical alignment, knowledgeable personnel and user involvement. All these factors were present in the BRTA project. As Rose and Grant (2009) point out, e-government projects are not just about technology implementation, they require a change in behavior and the mindset of both citizens and civil servants. The initiation, development and deployment of the High Security Driving License project went remarkably well despite the challenges that were faced. Sarantis et al. (2009) explain that project management for government projects does not mean strict applications of complex methods. In fact the best results are achieved from intelligent application of principles from existing methods to suit the nature and scale of the project. Sarantis et al. (2011) further point out that there are no common guidelines as to which project management methodology is most effective for the implementation of e-government projects. Government projects require flexibility, the ability to address change as opposed to rigid rules and guidelines. What really worked for BRTA is choosing a local implementer who was aware of the BRTA problems and practices and was able to handle them accordingly. TigerIT was also flexible in extending its services to ensure the project was running successfully. More than the business aspects, a sense of pride and reputation were associated with this project.

Sarantis et al. (2011) also identified some of the most common reasons for e-government projects to fail: a poor strategy or vision where the goals are not well defined, lack of leadership and ownership, lack of proper project management and poor IT infrastructure. None of these were present. The BRTA had a
clear goal about what it wanted to achieve. With the right leadership, the organization was able to go through a massive change in their processes and bring about greater transparency and control in the license issuing system. A very experienced project manager was selected from TigerIT who had the right skills to deal with the local customs and people and had also experience with the National ID project. The BRTA project was able to increase its operational efficiency and improve the quality of services. The only thing lacking now is empowering citizens by giving them greater access to information.

Although previous research identified a range of challenges common in many parts of the world and some of which may be applicable to this project, the findings show numerous unique problems that could potentially arise in other developing countries or Bangladesh itself. Wherever applicable, implementers and government authorities should keep in mind factors such as resistance from black marketers or agents, creating awareness among citizens, physical security of the project, political preferences and the challenge of convincing all stakeholders about adopting new processes.

Previous successful initiatives in developing countries show that the introduction of e-government reduces corruption (Bhuiyan, 2010). Perhaps the most well-known is the OPEN project of the Seoul Metropolitan Government introduced in April 1999. It is a web-based service that shows administrative procedures to citizens in various areas such as urban planning, housing and construction (Cho and Choi, 2005; Kim et al., 2009). It allows citizens to check the status of their applications in real time at each stage of the administrative procedure. Using any computer with access to the Internet, the citizen can track the status of their application, for example whether the application was received properly, the staff who is reviewing the file, when the application is expected to be approved, or whether it had been rejected, and if so, for what reasons (Kim et al., 2009).

A recent report on Bangladesh also found that with the computerization of the Railway Reservation System the number of black-marketers considerably decreased (Bhuiyan 2010). With the driving license project successfully implemented and running, the government should look forward to further positive changes. There is a significant gap between what can be achieved using ICTs
and what has already been implemented (OECD, 2002; OECD, 2003). According to Forman and Thompson (in Alghamdi et al., 2011), the government should take measures for establishing a website portal that provides citizen access to multiple government services from a single point of entry. Most governments around the world have established such web portals to allow citizens to receive services electronically (Lee et al., 2005).

To reap the maximum benefits from a technological solution, the government must encourage the effective use of computers and tools. According to Collings (2008), the shift should now be from “ID management” to “ID assurance”. The expression “ID management” is more government oriented suggesting concepts of data gathering and consolidation to serve the interests of the authority. The concept of “ID assurance” on the other hand is more consumer-centric suggesting processes and concepts meeting consumer needs.

One of the most common e-government tools are online services for the public, such as receipt of applications for licenses and certificates and payment of traffic fines. As such the following recommendations are set forth to take the driver’s license project of Bangladesh to the next level:

1. **Online application** – the paper-based forms remain the primary data gathering interface for the government. They are manually intensive and expensive to process. To truly maximize the benefits on an e-government system BRTA should look to expand its services by allowing online driver’s license applications. It should allow citizens to log onto the website, fill in all details online, attach supporting documents and schedule an appointment for biometric collection at the enrolling stations. The biggest challenge for this is that many people in Bangladesh are not familiar with using computers and the Internet or even do not own a computer. This is often referred to as the ‘digital divide’ in e-governance; however things are slowly changing and a favourable culture for this is growing. Mobile phones are being used extensively by both literate and illiterate people in Bangladesh. It can also be assumed that a person who has the skills to drive a car should be able to use computers at least at a basic level. Bangladesh has a lot of small cyber cafes and printing shops with operators that provide basic computer facilities, Internet, printing and photocopying at cheap prices. Those who do not
own or know how to operate a computer can walk into a cyber café to complete the form online. Once the online application service is introduced and is promoted by the government, the practice and culture will automatically follow. Alternatively, BRTA can allow for both options – those who have the computer capacity can use the online method while those who do not can use the more traditional method.

A case study done by Lips (2008) describes that in UK applicants can complete an online form where they need to enter information such as full name, date of birth, passport number, existing license number, bank details and addresses. Once the form is submitted the information is matched with the database of the Driver and Vehicle Licensing Agency (DVLA) to bring out any data for the applicant, including driving disqualification information and previous applications details. If no matches are returned the applicant can continue with the online application process, filling out the remaining required information and creating a new application in the system. If however multiple matches are returned and the results shows anything alarming, a DVLA staff member must intervene and the application can no longer be completed online. A similar approach can be adopted in Bangladesh.

2. Online renewal – to renew a driver’s license, the applicant has to go through the same process of filling out a form, going to BRTA and submitting the application. The only exception in this case is that the biometrics need not be captured again. Applicants who already have the new smart card driving license should not have to go through the same steps as first time applicants. The BRTA should expand its services by allowing an online renewal option.

3. Computer based tests – although the entire system has been revamped and made automated, the license test process remains unchanged. On the date of the test the applicant must attend BRTA premises and give a written test and if successful, followed by a practical test. All this had to be done on the same day requiring long waiting times. The BRTA should now look at automating the test process where each candidate gives computer-based tests. The questions will appear randomly from a database and the system will automatically decide whether the applicant passes or not. This will eliminate manual checking and close another loophole for corruption.
4. Traffic ticketing system – the BRTA should also look to introduce a traffic ticketing system through handheld devices. A history of traffic rules violations should be kept and the law enforcement agency should be able to view this information through the handheld devices. It should further allow them to issue new tickets for drivers breaking rules on the road.

CONCLUSION

The driving license project was introduced in Bangladesh as a solution to fight corruption, increase revenues and improve government processes and systems. The BRTA has made some commendable steps to bring about massive changes to its license issuing processes. Key success factors include the determination and willingness of the authority, leadership and choosing the right partners. Although standard project management guidelines were used, the implementation partner took a rather flexible approach to address the local issues and concerns which emerged during the process. Numerous challenges were also faced when rolling out the project in the field level, such as managing a large number of clients on a single day and changing old practices and the overall culture. These challenges are documented for the first time in this paper together with the lessons learned through experience.

Now that these goals have been achieved, the authority should take steps to ensure greater efficiency and citizen involvement. With resources and infrastructure already in place, it will be again a matter of taking the initiative to continue making improvements and achieve proper and effective e-governance.

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IMPACT OF KIBS AGGLOMERATION ON REGIONAL INNOVATION EFFICIENCY: EVIDENCE FROM CHINA’S HIGH-TECH INDUSTRY

INTRODUCTION

With the deepening industrialization and continuous development of informatization and the knowledge-based economy, the importance of the service industry for economic development is widely accepted. Theoretical and empirical analyses show that in the knowledge economy, Knowledge Intensive Business Services (KIBS) have gradually become essential for knowledge infrastructure and in the production and redistribution of basic knowledge (Hauknes et al., 1997). This is happening mainly through promoting integration of the decentralized explicit knowledge in the economy and the tacit knowledge in the enterprises and departments they serve (Hipp and Thether, 2000).

Research on KIBS began in the 1990s launched by Miles (1994), director of the UK Economic and Social Research Council’s Centre for Research on Innovation and Competition (CRIC) at the University of Manchester. Several European conferences highlighted and explored this theme during 2000 and 2005, and the 2000 European Competitiveness Report (European Commission 2000) fully reflected the importance attached to KIBS. Researchers outside China interested in KIBS have used qualitative and quantitative focusing on the definition and classification of KIBS, the links between KIBS and innovation systems, KIBS and service innovation and intellectual property protection. In China, the studies of KIBS began in the late 20th century, primarily in collaboration with foreign KIBS researches. This also generated China-specific recommendations and references (Lin and Wu, 2003; Wei and Xia, 2005; Liu, 2005;
Gao et al., 2004 and Liu and Ye, 2006). Although there has been research related to KIBS in terms of concept, classification and functions, compared to foreign countries, there is still shortage of empirical studies on China. In addition to the service industry being often neglected, there is no consensus about KIBS classification and their statistical specification which causes difficulties for data collection. The existing empirical studies use a micro-perspective on users and enterprises, yet ignoring the role of KIBS in enhancing the overall regional capability for innovation, especially from an efficiency point of view. This study considers KIBS as an important factor in regional innovation and development from a systematic perspective not only as the promoter of innovation at the corporate level.

Through reviewing literature related to KIBS and innovation systems, we discuss the role KIBS play for innovation as well as the mechanisms that enhance the efficiency of regional innovation. A theoretical framework is established which informs the empirical part of the study. On this basis, the next of the paper section constructs empirical models to evaluate the technological innovation efficiency of the high-tech industries in the different regions of China. We then examine the impacts of KIBS on the efficiency of the two-stage (R&D and commercialization) innovation followed by an analysis of the empirical results, policy implications and future research directions.

**LITERATURE REVIEW AND RESEARCH FRAMEWORK**

The existing studies on the functions of KIBS in the national innovation system are mainly approached from two perspectives - the process of innovation and the production and transfer of knowledge (Wei and Zhu, 2007). First, from the perspective of the national knowledge innovation system, KIBS play a major role in the interactive study of knowledge and information exchange between enterprises and research institutions, and they play a role in transforming knowledge, solving problems and producing knowledge in the localization of technology and business skills (Hauknes, 1998). The new Schumpeterism regards innovation as an evolution process based on knowledge, which is the cycle of interaction between tacit and explicit knowledge. From a knowledge system perspective, Howells and Roberts (2000) discuss the mechanism through
which KIBS facilitate the generation and diffusion of knowledge in a knowledge system by promoting the flow of knowledge within the tacit and the explicit knowledge subsystems, between the two subsystems, and playing the role of a structural hole in the system network that connects different knowledge systems together. In the same vein, Hertog and Bilderbeek (1998), made three assumptions: (a) KIBS have profound impacts on the diffusion ability of the innovation system; (b) in practice, KIBS have gradually developed into an informal second knowledge base, comparable to the first knowledge base represented by university and public research institutions; and (c) KIBS connect public and private knowledge. KIBS function for knowledge transmission and diffusion as well as playing a complementary role to the first knowledge base which is more formal and institutionalized.

Second, from the perspective of cooperative innovation of KIBS and units in the innovation system, the existing literature analyzes the mechanism of KIBS participating in client innovation. For example, Gadrey et al. (1995) divided the interactive innovation process into three stages, and specified three functions of KIBS according to the different stages: diagnosing problems, searching for solutions and participating in problem solving (Muller and Zenker, 2001). Similarly, Czarnitzki and Spielkamp (2003) shed light on the interactive process of KIBS enterprises with manufacturing enterprises or other service industries, and divided the functions of KIBS in the innovation system into three categories, namely purchaser of knowledge, provider of knowledge and cooperator in innovation. Other studies identified three functions of KIBS according to their degree of cooperation with client enterprises: promoting innovation, transmitting innovation and being the source of innovation (Miles et al., 1995). Empirical studies along the same lines were also conducted. For example Muller and Zenker (2001), using a postal innovation survey in French and German regions, found that KIBS transformed knowledge in the innovation systems both at the national and regional level, and became an important way of innovation diffusion to small and medium sized enterprises. Tsounis (1997) as well as Wei and Boden (2003) conducted case studies and found that KIBS had already become a source of national knowledge and innovation or represent the knowledge infrastructure in the regional system of innovation.
Overall KIBS fulfill their function in the regional system of innovation via acting as the second knowledge infrastructure and promoter of knowledge diffusion. However, there is still a shortage of empirical studies about the extent to which KIBS promote the development of regional innovation, and whether there are different performances at different stages of the innovation process. Studies, such as that of Mas-Verdú et al. (2011), are conducted from the perspective of the economic development and the degree of knowledge diffusion but ignore the more important question of how KIBS enhance efficiency. The approach taken here combines the mechanism of KIBS in the innovation system and the innovative production process (Figure 1), takes high-tech industry as an example and explores the extent to which KIBS promote the efficiency of the two-stage innovation and which subclass is more significant in the context of China.

![Figure 1 Conceptual Framework of KIBS in Innovation Process](image)

**Methods and Data**

There are generally two methods to assess technological efficiency: one is the parameter method represented by stochastic frontier analysis (SFA), the other is the non-parameter method represented by data envelopment analysis (DEA). Compared with SFA, DEA does not need to set a specific form of production function, which can avoid many problems in the process of function setting. It is also more suitable to estimate multi-input and multi-output production efficiency. Because of the complexity of technological innovation, it is difficult to describe the production function with variables. Further, this paper needs to estimate the efficiencies of the two stages in innovation, namely R&D and commercialization, which correlate with each other; thus we adopt DEA, the non-
parameter correlation network method (Kao, 2009).

**Relational Network DEA**

Using the work of Guan and Chen (2010), Lewis and Sexton (2004) and Kao (2009), we construct the relational network DEA based on the innovation process. Suppose there are \( n \) decision-making units (DMUs). For each \( DMU_j \) \((j=1,2,...,n)\), there are \( m^1 \) kinds of initial input \( X^1_{ij} \) \((i=1,2,...,m^1)\), \( m^2 \) kinds of intermediate input \( X^2_{ij} \) \((i=1,2,...,m^2)\), \( q \) kinds of intermediate output \( Z_{pj} \) \((p=1,2,...,q)\) and \( s \) kinds of final output \( Y_{rj} \) \((r=1,2,...,s)\). The linear programming based on the output-oriented network DEA can be expressed as follows:

\[
E_k = \max \sum_{r=1}^{s} u_r Y_{rk} 
\]

(s.t. \( \sum_{i=1}^{m^1} v^1_i X^1_{ik} + \sum_{i=1}^{m^2} v^2_i X^2_{ik} = 1 \))

\[
\sum_{r=1}^{s} u_r Y_{rj} - \sum_{i=1}^{m^1} v^1_i X^1_{ij} - \sum_{i=1}^{m^2} v^2_i X^2_{ij} \leq 0, \ j = 1,2,...,n
\]

\[
\sum_{p=1}^{q} w_p Z_{pj} - \sum_{i=1}^{m^1} v^1_i X^1_{ij} \leq 0, \ j = 1,2,...,n
\]

\[
\sum_{r=1}^{s} u_r Y_{rj} - \sum_{p=1}^{q} w_p Z_{pj} - \sum_{i=1}^{m^2} v^2_i X^2_{ij} \leq 0, \ j = 1,2,...,n
\]

\[
u_r, v^1_i, v^2_i, w_p \geq \varepsilon
\]

\( E_k \) is the overall efficiency of \( k \)th DMU, \( u_r, v^1_i, v^2_i, w_p \), are the weights for each variable respectively, and \( \varepsilon \) is the Archimedes infinitesimal. Formula (3) express the resource constraint of the whole innovation process, formula (4) and (5) define the resource constraints of the first and the second stage respectively. Formula (6) is the non-negative constraint for all the weights. It is easy to find that when (4) and (5) exist, the constraint of (3) loses efficacy; that is, the resource constraints of the whole process are correlated to the constraints of each stage, and the overall efficiency of the innovation process is subject to the efficiency of the core stage of the innovation process. Therefore, the relational network DEA reflects the correlative characteristic between the sub-processes of the innovation and the whole innovation. The efficiencies of the two stages can
be calculated respectively as follows:

\[
E_k^1 = \sum_{p=1}^{q} w_p^* Z_p / \sum_{i=1}^{m^1} v_i^1 X_{ik}^1
\]

(7)

\[
E_k^2 = \sum_{r=1}^{s} u_r^* Y_r / (\sum_{i=1}^{m^2} v_i^2 X_{ik}^2 + \sum_{p=1}^{q} w_p^* Z_p)
\]

(8)

The diagram of the model is shown in Figure 2 where \(X_T\) is the total input, \(X_1\) is the input of the R&D stage, \(X_2\) is the input of the commercialization stage, and \(X_1 + X_2\) equal to \(X_T\); \(Z\) is the output of the R&D stage, also serving as the intermediate input in the commercialization stage. The analyzed sample is the high-tech industry, which usually shares a high rate of innovation; it is assumed that all patents can be realized through commercialization. \(Y\) is the final output.

![Figure 2 Two-stage network system](image)

There is a lot of discussion in the literature about indicators to measure innovation efficiency (Guan and Liu, 2003; Liu and Guan, 2002 and Liu, 2005). Therefore this paper does not expand on this but based on the existing studies, we select the indicators for efficiency evaluation as presented in Table 1.

**Table 1 List of Indicators**

<table>
<thead>
<tr>
<th>(X_1)</th>
<th>R&amp;D personnel of full-time equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D expenditure</td>
<td>R&amp;D expenditure</td>
</tr>
<tr>
<td>(X_2)</td>
<td>Non-R&amp;D personnel in science and technology activities</td>
</tr>
<tr>
<td>Development funds for new products</td>
<td>Development funds for new products</td>
</tr>
<tr>
<td>(Z)</td>
<td>Number of patent applications</td>
</tr>
<tr>
<td>Number of technology patents granted</td>
<td>Number of technology patents granted</td>
</tr>
<tr>
<td>(Y)</td>
<td>Gross value of high-tech industry</td>
</tr>
<tr>
<td>Value of new products</td>
<td>Value of new products</td>
</tr>
<tr>
<td>Sales revenue from new products</td>
<td>Sales revenue from new products</td>
</tr>
</tbody>
</table>

Due to the lack of data Tibet is excluded from the study but all remaining 30
provinces and municipalities as included. The estimation is based on a balanced panel dataset of these 30 Chinese regions for the period of 2003-2011. The size of the full sample is thus 270. All data employed in efficiency estimation are drawn from *China Statistics Yearbook on High-tech Industry* (2004-2012) and *China Statistical Yearbook* (2004-2012).

**Determinants analysis - Tobit regression**

As the efficiency values measured by the DEA model range between 0 and 1, if the least square method is directly used, the failure to completely present the data would result in an estimation bias. Therefore, it is better to use a regression model for limited dependent variables. The two-step DEA-tobit method was derived from DEA studies and analyses dealing with this phenomenon. The first step is to assess the efficiency value of the decision-making unit through the DEA model, and the second stage is to construct the regression model by taking the efficiency value as an explained variable and the impact factors as the explanatory variable. In this paper, the tobit regression model is as follows:

\[ y^*_i = \beta_0 + \sum_{j=1}^{k} \beta_j x_{ij} + \varepsilon_i \]  \hspace{1cm} (9)

\[ y^*_i = y_i \text{ when } 0 < y_i \leq 1 \]  \hspace{1cm} (10)

\[ y^*_i = 0 \text{ when } y_i < 0 \]  \hspace{1cm} (11)

\[ y^*_i = 1 \text{ when } y_i > 1 \]  \hspace{1cm} (12)

in which, \( y^*_i \) is censored efficiency value, \( \beta_0 \) is a constant term, \( \beta_j \) is the estimated parameter for variables, \( x_{ij} \) are key determinants. This paper, while investigating the impact of KIBS on innovation efficiency, introduces industrial structure, industry scale, government support, property structure, foreign knowledge spillover, economic development level and the quality of labor force as control variables to examine the potential determinants. The error term \( \varepsilon_i \) represents the unobserved factors. An explanation for the selected indicators follows.

We first define the measurement of KIBS agglomeration which is the main objective of this paper. A unified consensus is yet to emerge about the categories of KIBS industries. For the case of China, this paper uses the classification
method proposed by Wei et al. (2007) which divides KIBS into four categories, namely: Information and Communication (ICT), Financial Services (FS), Business Services (BS), Science and Technology Services (STS). Based on the theory of industrial agglomeration in industrial economics, we employ the location quotient to measure the degree of agglomeration and specialization of KIBS industries. The equation is as follows:

\[ LQ_{ij} = \left( \frac{L_{ij}}{\sum_{j=1}^{m} L_{ij}} \right) / \left( \frac{\sum_{i=1}^{n} L_{ij}}{\sum_{i=1}^{n} \sum_{j=1}^{m} L_{ij}} \right) \]

where \( L_{ij} \) is the number of employers in the \( j_{th} \) industry of the \( i_{th} \) region. As the object studied in this paper is in the category of service industry, it is reasonable and convincing to reflect the industry agglomeration based on the number of employers than on the output value of the industry. One of the ways that KIBS promote the diffusion of knowledge and innovation is the flow of human capital. The data used are from China Statistical Yearbook (2004-2012).

Seven control variables are introduced as follows:

1. Industrial structure (IS) – the regions’ trade relations, labor division and technology connection in a nation depend on the development of second and tertiary industries. Therefore, industrial structure has a significant impact on regional industrial innovation. In addition, higher changing rate in industrial structure implies the region is undergoing an acceleration phase of industrialization, thereby presenting increase in new product output, improvement in innovation efficiency and advancement in the regional economic status. Given this, we choose the ratio of regional manufacturing output in the regional gross output to gauge the regional industrial structure and assume it is positively related to innovation efficiency.

2. Industry scale (M) – expansion in industry size can bring scale merits and knowledge spillovers to regional firms, while increasing competition with industries and thereby improve innovation. This paper employs industrial total output to measure industry scale and assumes it has a positive effect on innovation efficiency.

3. Government support (GSR) – government support reflects innovation investment from public rather than private sources. Traditionally, the government determines the allocation of public funds to an innovation area, which should have a positive effect on innovation efficiency. However, Guan and
Chen (2010) found that the firm’s investment has a positive effect on innovation efficiency improvement, while government investment has a negative one. In this paper, we use the ratio of scientific research expenditure in the local general finance budget spending to represent government support. Considering efficiency includes information both from inputs and outputs, we acknowledge that government support has a negative effect on efficiency due to excessive investment.

(4) Ownership Structure (DER) – it is widely accepted that the overall efficiency of domestic enterprises is lower than that of foreign firms due to a series of structural and management issues. This paper adopts the ratio of domestic firms in the total number of regional firms to investigate this relationship and assumes they are negatively related.

(5) Foreign knowledge spillover (FDI) – foreign knowledge spillover refers to the impact of foreign direct investment (FDI) on regional innovation capacity. In the empirical studies however there is no consensus on the impact of FDI. Opinions vary between positive influence, limited positive influence and negative influence. This paper uses the amount of foreign direct investment as the indicator of foreign knowledge spillover.

(6) Economic development level (AGDP) – regional economic development reflects the regional social and culture basis which is the accumulation of regional soft power. Having a better regional social and culture basis has certain advantage in innovation awareness and the collaboration atmosphere which could potentially contribute to innovation efficiency. This paper uses GDP per capita to represent regional economic development and investigate the impact of regional soft power.

(7) Quality of labor force (HC) – Li (2007) argues that enhancing the quality of the regional labor force is beneficial for strengthening the regional innovation capacity and elevating the regional innovation efficiency. A high quality labor force can better develop and make use of advanced knowledge and technology as well as contribute to re-innovating which helps in improving regional innovation efficiency. As the labor input in efficiency evaluation are R&D personnel and science and technology personnel who have a high knowledge threshold, the difference in the quality of labor force cannot be significant. We use average schooling years, as proposed by Barro and Lee (2000), to represent the quality of regional labor force.
Table 3 Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Size</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT</td>
<td>270</td>
<td>0.43</td>
<td>4.85</td>
<td>0.98</td>
<td>0.61</td>
</tr>
<tr>
<td>FS</td>
<td>270</td>
<td>0.65</td>
<td>1.67</td>
<td>0.99</td>
<td>0.18</td>
</tr>
<tr>
<td>BS</td>
<td>270</td>
<td>0.35</td>
<td>5.09</td>
<td>0.94</td>
<td>0.83</td>
</tr>
<tr>
<td>STS</td>
<td>270</td>
<td>0.45</td>
<td>3.66</td>
<td>1.07</td>
<td>0.56</td>
</tr>
<tr>
<td>KIBS</td>
<td>270</td>
<td>0.58</td>
<td>3.09</td>
<td>1.00</td>
<td>0.41</td>
</tr>
<tr>
<td>HC</td>
<td>270</td>
<td>6.04</td>
<td>11.56</td>
<td>8.32</td>
<td>0.94</td>
</tr>
<tr>
<td>FDI</td>
<td>270</td>
<td>0.07</td>
<td>327.99</td>
<td>43.91</td>
<td>56.98</td>
</tr>
<tr>
<td>AGDP</td>
<td>270</td>
<td>0.36</td>
<td>8.52</td>
<td>2.37</td>
<td>1.67</td>
</tr>
<tr>
<td>IS</td>
<td>270</td>
<td>0.23</td>
<td>0.62</td>
<td>0.48</td>
<td>0.07</td>
</tr>
<tr>
<td>M</td>
<td>270</td>
<td>0.01</td>
<td>2.46</td>
<td>0.43</td>
<td>0.45</td>
</tr>
<tr>
<td>GSR</td>
<td>270</td>
<td>0.00</td>
<td>0.22</td>
<td>0.03</td>
<td>0.05</td>
</tr>
<tr>
<td>DER</td>
<td>270</td>
<td>0.46</td>
<td>0.99</td>
<td>0.86</td>
<td>0.11</td>
</tr>
<tr>
<td>Sample Size</td>
<td>270</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ own calculations.

EMPIRICAL RESULTS

In this section, the innovation efficiency of the different regions is measured and they are ranked to present an overview of China’s high-tech industry. Tobit regression is then applied to estimate the impacts of KIBS on each stage of the innovation process, thereby identifying the extent to which they promote innovation efficiency and which subclasses are more significant. Lingo 11.0 and Stata 12.0 are used to perform the calculations.

Ranking of Two-stage Innovation Efficiency

The dataset described in the preceding section is used in the empirical models and the results are presented in Table 4. There are two types of highly ranked provinces. The first comprises provinces with a high level of economic development, such as Guangdong, Shanghai, Tianjin and Jiang, indicating that innovation efficiency is significantly related to economic development. The other includes provinces with a relatively lower economic development level, such as
Hainan, Guangxi and Inner Mongolia. Although these regions lag behind in innovation output, they rank relatively high in efficiency due to relatively lower innovation investment. For Beijing and Zhejiang, the opposite is true.

<table>
<thead>
<tr>
<th>Region</th>
<th>Total efficiency</th>
<th>R&amp;D Stage Ranking</th>
<th>Commercialization Stage Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guangdong</td>
<td>0.94</td>
<td>1</td>
<td>1.00</td>
</tr>
<tr>
<td>Shanghai</td>
<td>0.88</td>
<td>2</td>
<td>0.98</td>
</tr>
<tr>
<td>Tianjin</td>
<td>0.79</td>
<td>3</td>
<td>0.97</td>
</tr>
<tr>
<td>Hainan</td>
<td>0.70</td>
<td>4</td>
<td>0.79</td>
</tr>
<tr>
<td>Jiangsu</td>
<td>0.66</td>
<td>5</td>
<td>0.71</td>
</tr>
<tr>
<td>Fujian</td>
<td>0.64</td>
<td>6</td>
<td>0.85</td>
</tr>
<tr>
<td>Chongqing</td>
<td>0.63</td>
<td>7</td>
<td>0.74</td>
</tr>
<tr>
<td>Jilin</td>
<td>0.56</td>
<td>8</td>
<td>0.80</td>
</tr>
<tr>
<td>Shandong</td>
<td>0.54</td>
<td>9</td>
<td>0.66</td>
</tr>
<tr>
<td>Guangxi</td>
<td>0.49</td>
<td>10</td>
<td>0.68</td>
</tr>
<tr>
<td>Zhejiang</td>
<td>0.45</td>
<td>11</td>
<td>0.47</td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>0.41</td>
<td>12</td>
<td>0.63</td>
</tr>
<tr>
<td>Guizhou</td>
<td>0.40</td>
<td>13</td>
<td>0.50</td>
</tr>
<tr>
<td>Hunan</td>
<td>0.39</td>
<td>14</td>
<td>0.54</td>
</tr>
<tr>
<td>Jiangxi</td>
<td>0.36</td>
<td>15</td>
<td>0.63</td>
</tr>
<tr>
<td>Liaoning</td>
<td>0.34</td>
<td>16</td>
<td>0.45</td>
</tr>
<tr>
<td>Hubei</td>
<td>0.33</td>
<td>17</td>
<td>0.48</td>
</tr>
<tr>
<td>Sichuan</td>
<td>0.32</td>
<td>18</td>
<td>0.48</td>
</tr>
<tr>
<td>Henan</td>
<td>0.31</td>
<td>19</td>
<td>0.43</td>
</tr>
<tr>
<td>Anhui</td>
<td>0.30</td>
<td>20</td>
<td>0.41</td>
</tr>
<tr>
<td>Hebei</td>
<td>0.28</td>
<td>21</td>
<td>0.45</td>
</tr>
<tr>
<td>Beijing</td>
<td>0.24</td>
<td>22</td>
<td>0.58</td>
</tr>
<tr>
<td>Shanxi</td>
<td>0.24</td>
<td>23</td>
<td>0.40</td>
</tr>
<tr>
<td>Ningxia</td>
<td>0.23</td>
<td>24</td>
<td>0.34</td>
</tr>
<tr>
<td>Yunnan</td>
<td>0.23</td>
<td>25</td>
<td>0.36</td>
</tr>
<tr>
<td>Gansu</td>
<td>0.23</td>
<td>26</td>
<td>0.47</td>
</tr>
<tr>
<td>Qinghai</td>
<td>0.21</td>
<td>27</td>
<td>0.39</td>
</tr>
<tr>
<td>Xinjiang</td>
<td>0.21</td>
<td>28</td>
<td>0.25</td>
</tr>
<tr>
<td>Heilongjiang</td>
<td>0.20</td>
<td>29</td>
<td>0.33</td>
</tr>
<tr>
<td>Shaanxi</td>
<td>0.19</td>
<td>30</td>
<td>0.43</td>
</tr>
</tbody>
</table>

The rankings at the R&D and industrialization stage indicate inconsistence between R&D efficiency and industrialization efficiency and divide the regions
into four types: (a) regions with dual advantages; (b) regions with R&D advantage; (c) regions with industrialization advantage; (d) regions with dual disadvantages. This is shown in Figure 3.

<table>
<thead>
<tr>
<th>Quadrant</th>
<th>Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Quadrant</td>
<td>Guangdong, Shanghai, Tianjin, Fujian, Hainan, Chongqing, Jiangsu, Shandong, Hunan, Guizhou</td>
</tr>
<tr>
<td>Second Quadrant</td>
<td>Zhejiang, Xinjiang</td>
</tr>
<tr>
<td>Third Quadrant</td>
<td>Hubei, Liaoning, Sichuan, Anhui, Gansu, Henan, Hebei, Shanxi, Shaanxi, Ningxia, Qinghai, Yunnan, Heilongjiang</td>
</tr>
<tr>
<td>Fourth Quadrant</td>
<td>Jilin, Guangxi, Inner Mongolia, Jiangxi, Beijing</td>
</tr>
</tbody>
</table>

Figure 3 Matrix of two-stage innovation efficiency of high-tech industry

**Impacts of KIBS on two-stage innovation efficiency**

The dependent variables are the three types of efficiency estimated in the preceding section, the independent variables are the location quotient of KIBS industry and other control variables. We use the tobit regression to measure the impact intensity with the assistance of Stata 12.0.

**KIBS with positive impacts on commercialization stage**

The regression results are shown in table 5. The P value of KIBS is 0.281 which is not significant, implying that these industries did not contribute positively to
regional innovation efficiency in China. However from the sign of the coefficient can be concluded that the relationship between them is positive. The P value of the control variables industrial structure, industry scale, foreign knowledge spillover and quality of labor force are 0.003, 0.072, 0.082 and 0.018, respectively, indicating positive effects on regional innovation efficiency, which is as expected.

Table 5 Regression results

<table>
<thead>
<tr>
<th>Efficiency Variables</th>
<th>Total Coefficient</th>
<th>Total P value</th>
<th>R&amp;D stage Coefficient</th>
<th>R&amp;D stage P value</th>
<th>Commercialization stage Coefficient</th>
<th>Commercialization stage P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.0394</td>
<td>0.906</td>
<td>1.2220***</td>
<td>0.000</td>
<td>-0.0473</td>
<td>0.918</td>
</tr>
<tr>
<td>KIBS</td>
<td>0.0869</td>
<td>0.281</td>
<td>0.0022</td>
<td>0.977</td>
<td>0.2153**</td>
<td>0.042</td>
</tr>
<tr>
<td>IS</td>
<td>0.0074***</td>
<td>0.003</td>
<td>-0.0021</td>
<td>0.408</td>
<td>0.0089**</td>
<td>0.013</td>
</tr>
<tr>
<td>M</td>
<td>0.0953*</td>
<td>0.072</td>
<td>0.0381</td>
<td>0.513</td>
<td>0.2340***</td>
<td>0.007</td>
</tr>
<tr>
<td>GSR</td>
<td>-0.3968***</td>
<td>0.006</td>
<td>0.0904</td>
<td>0.585</td>
<td>-0.5475***</td>
<td>0.009</td>
</tr>
<tr>
<td>DER</td>
<td>-0.4982***</td>
<td>0.005</td>
<td>-0.7245***</td>
<td>0.000</td>
<td>-0.4648*</td>
<td>0.065</td>
</tr>
<tr>
<td>FDI</td>
<td>0.0007*</td>
<td>0.082</td>
<td>0.0023***</td>
<td>0.000</td>
<td>0.00001</td>
<td>0.977</td>
</tr>
<tr>
<td>AGDP</td>
<td>-0.0227</td>
<td>0.151</td>
<td>-0.0618***</td>
<td>0.000</td>
<td>-0.0170</td>
<td>0.471</td>
</tr>
<tr>
<td>HC</td>
<td>0.0444**</td>
<td>0.018</td>
<td>0.0040</td>
<td>0.909</td>
<td>0.0432</td>
<td>0.349</td>
</tr>
</tbody>
</table>

Log likelihood 144.5613 97.7342 29.7717
Prob>chi2 0.0000 0.0000 0.0000

Note: ***, ** and * represent significance at the level of 1%, 5% and 10% respectively.

Source: Authors’ own calculations.

The P value of government support and ownership structure are significant at 1% level, but the sign of the coefficient is negative, showing that the innovation investment from China’s government did not transform into innovation output efficiently, and the local government’s planned investment may crowd out innovation the activities of regional enterprises, weakening the function of market optimization. The negative relationship between ownership structure and innovation efficiency indicates lower efficiency of domestic firms, which inhibits the improvement of the regional innovation efficiency.

At the R&D stage, the P value of KIBS is high but the impact is not significant. Government support, foreign knowledge spillover and economic development are all significant at 1% level. The negative effect of government support is mainly because the majority of government financed institutions are state-
owned research organizations rather than private-owned, which makes the pur-
suit of social benefits more important than that of economic benefits. In addi-
tion, the lack of a restriction mechanism on policy funds also pulls down the
efficiency. In foreign direct investment, the introduction of high quality labor
force and advanced technology will form knowledge spillover effects which is
beneficial to regional imitation innovation. As the measurement of innovation
output at the R&D stage is patents, foreign investors tend to apply for patent
rights to achieve monopoly profits which also pushes up the regional innovation
output. The negative relationship between economic development and innova-
tion efficiency is consistent with previous analysis.

At the commercialization stage, however, the P value of KIBS is 0.042, which
is significant at 5% level. This means that the role of China's KIBS is more li-
ely to be an intermediate input in the transformation of innovation output at
the second stage. The adopted conceptual model shows that KIBS join the in-
novation process through acting as second knowledge base and innovation dif-
susor. As a knowledge diffusor, with the development of technology, it is in-
creasingly impossible for a single firm to carry out innovation activities com-
pletely dependent on its own resources, which leads to networked innovation
processes. As innovation bridge, KIBS provide convenience of connections be-
tween firms and between firms and other organizations. Through KIBS firms
can better and quicker establish regional innovation networks and significantly
reduce the cost of obtaining information and technology, which shows as im-
provement in efficiency. From the point of view of a second knowledge base,
KIBS are not only able to produce knowledge through interacting with firms
but are also able to digest and integrate scientific knowledge in universities and
research institutions, facilitating the flow of regional tacit knowledge. They fur-
ther assist in forming practical knowledge and accelerating the speed of absorp-
tion by small and medium sized firms with imperfect knowledge stock in the
innovation system, thereby significant improving the efficiency of the commer-
cialization stage.

Overall, the contribution of KIBS to innovation efficiency improvement is not
significant, it only manifests at the commercialization stage. Compared to the
important role played by KIBS for innovation in developed countries, China’s
KIBS are still at an initial stage of development. This makes their role as a
knowledge base difficult to be placed on a par with the role of first knowledge base. At the same time, the diffusion function of KIBS as a structural hole is not performed well because of the imperfect regional innovation networks. On the other hand, whether the spillover of knowledge can be transformed into corporate innovation output is highly dependent on the absorptive capacity of the enterprises (Cohen and Levinthal, 1990). As a whole, the absorptive capacity of high-tech enterprises in China is still weak or not strong enough to keep a high degree of synergy with the KIBS in the innovation process, which prevents the high-tech enterprises to take full advantage of the KIBS spillover effects, and thus affects the improvement of innovation performance. However, with the continuous development of the knowledge-based economy and the increasing progress of the network innovation modes, enterprises, especially the high-tech enterprises, have to establish effective networks of talent, capital and services, which is the key for their survival. Hence, because of the key characteristics of KIBS, such as being innovative, high-added value, powerful driving force etc., they should be given priority in development as the key element in industrial optimization and improvement in China through regional innovation efficiency.

**Major contributions from ICT and Financial services**

To further analyze whether the various KIBS industries perform differently in the innovation process, we use the agglomeration of each industry to replace the overall one and regress them separately to observe the performance of each industry in the two stages. The results are shown in Table 6 for information and telecommunication services (ICT), Table 7 for financial services (FS). Table 8 for business services (BS) and Table 9 for science and technology services (STS).

Table 6 shows that despite the coefficient of control variables changing to some extent, the basic relationship and significance are the same as before, suggesting robustness of the results. The P value of ICT in total efficiency is 0.048, significant at 5% level, while it is insignificant at the R&D stage and significant at 5% level at the commercialization stage. The regression result for financial services (Table 7) show that their impact is significant at 5% both in total efficiency and the commercialization stage similar to the ICT industry.
Table 6 Regression Results – Information and Communication Technologies

<table>
<thead>
<tr>
<th>Efficiency Variables</th>
<th>Total Coefficient</th>
<th>Total P value</th>
<th>R&amp;D stage Coefficient</th>
<th>R&amp;D stage P value</th>
<th>Commercialization stage Coefficient</th>
<th>Commercialization stage P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.1291</td>
<td>0.712</td>
<td>1.1211***</td>
<td>0.001</td>
<td>-0.0518</td>
<td>0.913</td>
</tr>
<tr>
<td>ICT</td>
<td>0.0853**</td>
<td>0.048</td>
<td>0.0456</td>
<td>0.347</td>
<td>0.0950**</td>
<td>0.037</td>
</tr>
<tr>
<td>IS</td>
<td>0.0085***</td>
<td>0.001</td>
<td>-0.0010</td>
<td>0.701</td>
<td>0.0087**</td>
<td>0.018</td>
</tr>
<tr>
<td>M</td>
<td>0.1070**</td>
<td>0.041</td>
<td>0.0550</td>
<td>0.345</td>
<td>0.2110**</td>
<td>0.012</td>
</tr>
<tr>
<td>GSR</td>
<td>-0.4049***</td>
<td>0.005</td>
<td>0.0776</td>
<td>0.636</td>
<td>-0.5658***</td>
<td>0.007</td>
</tr>
<tr>
<td>DER</td>
<td>-0.4428**</td>
<td>0.014</td>
<td>-0.7045***</td>
<td>0.000</td>
<td>-0.4874*</td>
<td>0.056</td>
</tr>
<tr>
<td>FDI</td>
<td>0.0007*</td>
<td>0.089</td>
<td>0.0023***</td>
<td>0.000</td>
<td>0.0001</td>
<td>0.979</td>
</tr>
<tr>
<td>AGDP</td>
<td>-0.0290*</td>
<td>0.077</td>
<td>-0.0672***</td>
<td>0.000</td>
<td>-0.0172</td>
<td>0.473</td>
</tr>
<tr>
<td>HC</td>
<td>0.0543*</td>
<td>0.102</td>
<td>0.0032</td>
<td>0.927</td>
<td>0.0632</td>
<td>0.156</td>
</tr>
</tbody>
</table>

Log likelihood 145.7936 98.1918 29.2111
Prob>chi2 0.0000 0.0000 0.0000

Note: ***, ** and * represent significance at the level of 1%, 5% and 10% respectively.

Source: Authors’ own calculations

Table 7 Regression Results – Financial Services

<table>
<thead>
<tr>
<th>Efficiency Variables</th>
<th>Total Coefficient</th>
<th>Total P value</th>
<th>R&amp;D stage Coefficient</th>
<th>R&amp;D stage P value</th>
<th>Commercialization stage Coefficient</th>
<th>Commercialization stage P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.1233</td>
<td>0.730</td>
<td>1.1645***</td>
<td>0.001</td>
<td>-0.1567</td>
<td>0.755</td>
</tr>
<tr>
<td>FS</td>
<td>0.1736**</td>
<td>0.041</td>
<td>0.0489</td>
<td>0.644</td>
<td>0.2394**</td>
<td>0.035</td>
</tr>
<tr>
<td>IS</td>
<td>0.0069***</td>
<td>0.003</td>
<td>-0.0021</td>
<td>0.390</td>
<td>0.0067**</td>
<td>0.048</td>
</tr>
<tr>
<td>M</td>
<td>0.0965**</td>
<td>0.061</td>
<td>0.0429</td>
<td>0.446</td>
<td>0.2070***</td>
<td>0.014</td>
</tr>
<tr>
<td>GSR</td>
<td>-0.3915***</td>
<td>0.007</td>
<td>0.0898</td>
<td>0.586</td>
<td>-0.5377***</td>
<td>0.011</td>
</tr>
<tr>
<td>DER</td>
<td>-0.4916**</td>
<td>0.006</td>
<td>-0.7203***</td>
<td>0.000</td>
<td>-0.4994*</td>
<td>0.051</td>
</tr>
<tr>
<td>FDI</td>
<td>0.0007*</td>
<td>0.071</td>
<td>0.0023***</td>
<td>0.000</td>
<td>0.0001</td>
<td>0.913</td>
</tr>
<tr>
<td>AGDP</td>
<td>-0.0271*</td>
<td>0.095</td>
<td>-0.0637***</td>
<td>0.000</td>
<td>-0.0176</td>
<td>0.468</td>
</tr>
<tr>
<td>HC</td>
<td>0.0565*</td>
<td>0.082</td>
<td>0.0048</td>
<td>0.886</td>
<td>0.0708</td>
<td>0.111</td>
</tr>
</tbody>
</table>

Log likelihood 145.4188 97.8409 29.2342
Prob>chi2 0.0000 0.0000 0.0000

Note: ***, ** and * represent significance at the level of 1%, 5% and 10% respectively.

Source: Authors’ own calculations

However, BS and STS are not significant at any stage. Compared to KIBS’ important role for regional innovation in developed countries, the their function of enhancing regional innovation efficiency does manifest in China. Instead, it is demonstrated only for ICT and FS at the commercialization process which take a leading position in KIBS and are relatively more mature with clearer func-
Table 8 Regression Results – Business Services

<table>
<thead>
<tr>
<th>Efficiency Variables</th>
<th>Total Coefficient</th>
<th>Total P value</th>
<th>R&amp;D stage Coefficient</th>
<th>R&amp;D stage P value</th>
<th>Commercialization stage Coefficient</th>
<th>Commercialization stage P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.1534</td>
<td>0.631</td>
<td>1.2042***</td>
<td>0.000</td>
<td>0.2388</td>
<td>0.578</td>
</tr>
<tr>
<td>BS</td>
<td>0.0131</td>
<td>0.711</td>
<td>-0.0149</td>
<td>0.684</td>
<td>0.0070**</td>
<td>0.034</td>
</tr>
<tr>
<td>IS</td>
<td>0.0064***</td>
<td>0.005</td>
<td>-0.0024</td>
<td>0.342</td>
<td>0.1990**</td>
<td>0.015</td>
</tr>
<tr>
<td>M</td>
<td>0.0802**</td>
<td>0.018</td>
<td>0.0321</td>
<td>0.571</td>
<td>0.5316***</td>
<td>0.012</td>
</tr>
<tr>
<td>GSR</td>
<td>-0.3954***</td>
<td>0.007</td>
<td>0.0861</td>
<td>0.603</td>
<td>-0.5316**</td>
<td>0.012</td>
</tr>
<tr>
<td>DER</td>
<td>-0.5319***</td>
<td>0.003</td>
<td>-0.7356***</td>
<td>0.000</td>
<td>-0.5105*</td>
<td>0.039</td>
</tr>
<tr>
<td>FDI</td>
<td>0.0007*</td>
<td>0.084</td>
<td>0.0023***</td>
<td>0.000</td>
<td>0.0001</td>
<td>0.994</td>
</tr>
<tr>
<td>AGDP</td>
<td>-0.0192</td>
<td>0.218</td>
<td>-0.0622***</td>
<td>0.000</td>
<td>-0.0064</td>
<td>0.777</td>
</tr>
<tr>
<td>HC</td>
<td>0.0483</td>
<td>0.165</td>
<td>0.0107</td>
<td>0.773</td>
<td>0.0416</td>
<td>0.379</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>144.0271</td>
<td></td>
<td>97.8168</td>
<td></td>
<td>28.7796</td>
<td></td>
</tr>
<tr>
<td>Prob&gt;chi2</td>
<td>0.0000</td>
<td></td>
<td>0.0000</td>
<td></td>
<td>0.0000</td>
<td></td>
</tr>
</tbody>
</table>

Note: ***, ** and * represent significance at the level of 1%, 5% and 10% respectively.

Source: Authors’ own calculations

Although Business Services and Science and Technology Services are characterized by extensive contact and wide range of influence, they contact are not deep enough and insufficient in intensity, which does not stimulate efficiency. On the other hand, BS and STS are the alternative to in-house innovation. Taking STS as an example, the enterprise contracts the R&D function out and focuses its major attention on marketing. The corresponding service STS functions take the place of the enterprise to conduct R&D activities, which leads to a crowding-out effect rather than to the promotion and improvement of innovation.

This is consistent with the fact that the promotion effects of these two industries are mainly manifested at the commercialization stage, which means that the role of China's KIBS is more likely to be an intermediate input in the transformation of innovation output at the second stage. In China, R&D activities still heavily rely on internal knowledge sources, relatively ignoring the use of the external alternatives. Therefore, there is still a huge potential for KIBS to enhance innovation in China. Greater efforts should be made for establishing an open regional innovation systems and innovation circles with positive interaction and
two-way promotion, in which the enterprises could combine and utilize internal and external knowledge more effectively. This will allow for the potential of KIBS in knowledge diffusion to be fully explored.

Table 9 Regression Results – Science and Technology Services

<table>
<thead>
<tr>
<th>Efficiency Variables</th>
<th>Total</th>
<th>R&amp;D stage</th>
<th>Commercialization stage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>P value</td>
<td>Coefficient</td>
</tr>
<tr>
<td>C</td>
<td>0.1368</td>
<td>0.672</td>
<td>1.2371***</td>
</tr>
<tr>
<td>STS</td>
<td>0.0019</td>
<td>0.965</td>
<td>-0.0177</td>
</tr>
<tr>
<td>IS</td>
<td>0.0063***</td>
<td>0.009</td>
<td>-0.0025</td>
</tr>
<tr>
<td>M</td>
<td>0.0761</td>
<td>0.133</td>
<td>0.0330</td>
</tr>
<tr>
<td>GSR</td>
<td>-0.3996***</td>
<td>0.006</td>
<td>0.0940</td>
</tr>
<tr>
<td>DER</td>
<td>-0.5401***</td>
<td>0.002</td>
<td>-0.7241***</td>
</tr>
<tr>
<td>FDI</td>
<td>0.0007*</td>
<td>0.080</td>
<td>0.0023***</td>
</tr>
<tr>
<td>AGDP</td>
<td>-0.0197</td>
<td>0.210</td>
<td>-0.0607***</td>
</tr>
<tr>
<td>HC</td>
<td>0.0532*</td>
<td>0.101</td>
<td>0.0066</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>143.9591</td>
<td></td>
<td>97.8063</td>
</tr>
<tr>
<td>Prob&gt;chi2</td>
<td>0.0000</td>
<td></td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Note: ***, ** and * represent significance at the level of 1%, 5% and 10% respectively.

Source: Authors’ own calculations.

**CONCLUSION**

This paper explored the impact of KIBS, acting as a second knowledge base and knowledge diffuser, on regional two-stage innovation efficiency by employing relational network DEA and tobit regression techniques based on provincial 2003–2011 panel data of high-tech industries. Some control variables are also introduced to analyze the determinants of regional innovation efficiency.

The results show that: first, the development of China’s innovation efficiency at the different stages is not consistent, which inhibits the improvement of total efficiency and further causes waste of resources and distribution imbalance. Regions should find their own efficiency optimization path according to their two-stage efficiency. Second, the overall effect of KIBS is not significant, while the effect at the commercialization stage is significant. This implies that in China the role of KIBS in the innovation system is more likely to be as an intermediate
input rather than a linkage in innovation based on innovation networks. In contrast, the R&D stage depends mainly on internal knowledge sources, with utilization of external knowledge being ignored. Third, ICT and FS have a positive efficiency effect on the commercialization stage, while BS and STS are not significant in both stages. Compared to developed countries, KIBS in China did not provide significant support to regional innovation efficiency while ICT and FS mainly manifest their contribution. This is related to the development stage of the industry and is the result of different functional mechanisms of the industries. Finally, industrial structure, industry scale, foreign knowledge spillover and quality of labor force have a positive effect on regional innovation efficiency, while government support and ownership structure have a negative effect on regional innovation efficiency. The impacts of industrial structure and industry scale are at the commercialization stage while the impact of foreign knowledge spillover is at the R&D stage. The negative effect of government support is at the commercialization stage while the negative effect of ownership structure is at the R&D stage.

Hence, there is great potential for the development of KIBS industries in China, which is important for innovation in the country and may become an effective way to solving the mismatch problem puzzling China's technological and economic development for a long time. The relative government departments concerned should not only enhance the composition of KIBS industries but also focus on building better innovation networks and open innovation systems so as to create environments for KIBS to bring their function into play.

This research is not without limitations. The analyses at the provincial level reflect a micro perspective without reflecting the characteristics of KIBS agglomerates in the urban regions. Other conclusions may be found if the analyses were conducted at the urban-level.

REFERENCES


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PERSPECTIVE ON INDUSTRY VIABILITY: THE CASE OF VENTURE CAPITAL IN AUSTRALIA

INTRODUCTION

The venture capital industry (VCI) has direct economic benefits to key industry participants, such as venture capitalists (VCs), entrepreneurs and investors. Nonetheless, it is worth considering the many externalities it generates to society and the environment, a reason why other stakeholders should have interest in this industry. As we write papers using Microsoft Office on a Dell computer and check Google Scholar for references, we do not have to go too far to find out how venture capital backed companies have changed the way we do research or business like never before. Venture capital (VC) has developed most influential companies like Microsoft, Google, Apple, Facebook or YouTube which have impacted live even in remote villages in developing countries. Although we do not intend to capture the depth and breadth of the industry’s social benefit or cost here, one could easily recognize the social significance of the industry in terms of its contribution to technological innovation, productivity growth or social connectivity. Furthermore, there has also been growth of social enterprises doing business for social benefit. In response there has been social venture capital which would commit funds to finance social enterprises. There are also VC funds committed to support enterprises promoting clean technology and a green economy. Hence, the scope of VCI in our economic and socio-environmental space has expanded significantly.

Countries around the world including Australia have made an effort to develop their own VCI in light of the US experience. The Australian government as part of the industrialization policy in 1980s initiated the launch of a series of pro-
grams to develop the local VCI (Forsaith 1993). Along the way, it adopted several key financing practices from the US while dealing with internal market conditions. Here we assess the first 25 years life path of the Australian VCI from 1984 to 2008 and analyze its viability issues from practitioners’ perspective. There are two distinct but connected aspects of viability for the VCI system. The first aspect is related to the continuity and development of the industry in terms of maintaining its core business activities, such as raising and investing funds in promising technology ventures in their early stages. The other viability concern of the VCI is implementing sustainability practices in companies in which they invest, in terms of addressing environmental, social and corporate governance (ESG) issues.

**LITERATURE AND THEORIES**

The academic literature on industry viability has been influenced by sustainable development at macroeconomic level (WCED 1987). The agenda has primarily been driven by the United Nations with emphasize on environmental sustainability (Pezzey 2004). This has inflicted the development of industry ecology literature, especially from the mid-1990s with a focus on resource intensive industries. There has been a parallel development in corporate sustainability literature which was influenced by the sustainable development agenda as well as the socially responsible investment (SRI) initiative. The SRI initiative started with advocating for selective disinvestment in companies involved in socially undesirable investment. It was driven by a group of private investors and their significant collective investment power made many companies reconsider the notion of business risk. Global SRI assets experienced rapid growth in the last two decades which totaled at US$ 13.6 trillion by 2012 including US$ 152 billion of Australian assets (RIAA 2013). This subsequently popularized a formal corporate sustainability accounting framework around the ESG risk and opportunities (GRI 2013). The framework has earned wide acceptance for its attention to the viability of core business activities unlike industry ecology. It has therefore been recognized that 21st century sustainability programs must balance environmental issues with socio-economic aspects as any one problem could not be tackled in isolation (Elkington 1994).
Appleton (2006) points out that the noun ‘sustainability’ first appeared in the English dictionary only in the late 1980s following the publication of the Brundtland commission report which coined the term sustainable development (WCED 1987) whereas the verb ‘sustain’ has been there since thirteenth century. The literature on sustainability and related concepts has enormously grown since then (Pezzey 1992). The introduction of the term ‘sustainable development’ was a direct response to the growing conflict between free market advocates and environmentalists concerned about the large scale depletion and degradation of natural resources by industrial activities. Hence, it was essential to introduce a market based approach to promote environmental sustainability (Mitlin 1992). Sustainability policies therefore focused on environmental issues often excluding socio-economic considerations (Pezzey 2004, Dyllicks and Hockerts 2002). At the same time sustainability inherited concepts and approaches such as system thinking or lifecycle assessment from the literature on environmental sustainability.

In relation to industry viability, many authors make analogy between industrial and natural eco-systems and propose product based strategies emphasizing lifecycle assessment and process based strategies optimizing resource and energy usage (Frosch and Gallopolouos 1989, Lowe and Evans 1995). The approach in essence suggests that transforming an industrial system in terms of material and energy flows can promote efficiency and environmental sustainability (Erkman 1997). Subsequently, the resource intensive industries such as mining, construction or manufacturing started to use the approach in sustainability analysis (Oritz et.al. 2009, Orsato and Wells 2007, Infante et.al. 2013). Nonetheless, sustainability models over time expanded their scopes from environmental constraints to economic valuation and social behavior (Todorov and Marinova 2011). Accordingly, the broader scopes of industry viability would lie beyond environmental issues to embrace socio-economic aspects (Tonelli et.al. 2013).

A system approach to sustainability analysis has been adapted to study organizations including corporations (Azapagic 2003) although the use of lifecycle assessment has largely been related to process and product life in a more organic sense. In this paper we draw similar analogy between a natural system lifecycle and the notion of industry lifecycle to evaluate the viability of the Australian
VCI. Costanza and Patten (1995) suggest that sustainability is simply about sustaining a system or subsystem. This subsequently leads to three questions as to what system/sub-system, for how long and when to assess whether the system is viable to sustain. The longevity of any system’s lifespan is likely to be finite with an optimum natural length. Nonetheless, the lifespan of many systems can be much longer and cannot be estimated with reasonable accuracy. Hence, in answering their third question we consider that in most practical cases a system can only be assessed on a continual basis. Subsequently, any issue, element or event which can potentially reduce the natural lifespan of the system can be considered unsustainable. We use this insight in defining sustainability objectives and devising strategies for the Australian VCI.

The system approach has been used in organizational studies with the concept that the internal and external environment should be viewed as a set of interconnected elements (Scott and Davis 2007). Industry is a collection of firms which are interdependent because of the production process and product market space they share. The literature on industry lifecycles has been primarily inspired by the theory of creative destruction and business cycle (Schumpeter 1947, Williamson 1987). It is argued that industries evolve over time depicting a lifecycle pattern (Agarwal and Sarker 2002, Miles et al. 1993). The classic industry lifecycle derived from empirical observations considers several stages that industries go through (Jovanovic and MacDonald 1994, Klepper 1997). It starts with the exploratory or fragmentation stage where the firms explore different products, services and approaches to the market followed by the growth and shake-out stage when certain dominant business models prevail over others. Eventually this reaches a mature stage consolidating the dominant business models and increasing the market size. Finally, it enters the declining stage when competition from other industries intensifies. However, the length of each stage as well the overall lifecycle would vary according to industry characteristics and geographic location. The VCI is essentially a financial intermediary, providing financial services to the technology start-ups. This industry has matured in the US where the dominant models emerged. Other countries including in Australasia are at various stages of VCI development and often have replicated the dominant US models.
However, there is an additional challenge in devising any industry viability program as there are rarely defined boundaries or formal governing bodies. Sustainable development programs at macroeconomic level could be devised by the governments and corporate sustainability programs at the firm level could be driven by corporate boards whereas industry viability programs are often left neither to firms nor to the states, although industry practices and culture could have strong influence on firm behavior and performers (Karniouchina et al. 2013, Christensen et al. 1999, Gordon 199) which in turn can have significant economic consequences. Hence in terms of governing, industry viability programs addressing culture can be instrumental, although bringing necessary changes to enhance sustainability performance can be slow and challenging (Magala 2012).

CASE ANALYSIS: METHOD AND DATA

We demonstrate our approach to industry viability with the case study of the Australian VCI. For empirical purposes it is important to draw the analytical boundary. We define the industry as the collection of all Australian venture capital firms (VCFs) registered locally including those which have non-resident investors and foreign portfolios. An explanation of the industry mechanism to identify the issues and stakeholders for viability evaluation is first provided. Then we proceed with the life path of the industry since its inception. In terms of data we take a snapshot of the first 25 years of its life and evaluate the developments in relation to the local market realities as well as relevant policies and programs in place.

VC Industry System

Professional venture capital fund management started in the US in 1946 (Gompers 1994). Dominant models and practices in the VCI eventually emerged as the industry matured. The success of the US model in the 1980s grabbed global attention and other countries including Australia started to develop their own VC industries. The VCI mechanism summarized here is based on the dominant
US models described in various publications (Sahlman 1990, Bygrave and Timmons 1992, Gompers and Lerner 2004, Lerner et al. 2012, Wong 2006). Venture capital (VC) is a fund particularly used in financing young but promising technology ventures. Such investments involve high risk as well as long period for generating returns. The VC fund investors therefore come with appetite for higher risk and longer investment horizon. Venture capital firms (VCFs) are typically financial intermediaries run by professional fund managers called venture capitalists (VCs). Thus, the role of VCFs and VCs are often used interchangeably. The VCs can raise money from individual or institutional investors and form other funds. A firm can raise one or more funds which can be operated as separate fund companies. Each fund would usually be raised from a homogeneous group of investors with a similar risk profile and investment preferences. Funds are then invested in young and promising ventures.

The VCFs as a special class of financial intermediaries do not provide direct debt to companies like the banks do. Instead they would buy equity in the portfolio companies usually in the form of convertible/preferred shares (Schmidt 2003). Then VCs become active shareholders getting involved in the board and management of portfolio companies with the aim of facilitating them to grow as well as to safeguard their holdings in the ventures. The investments are made in stages as ventures grow (Neher 1999). If a venture does not perform well, the VCs could abandon it. Otherwise VCs would lead the venture to exit when it matures and the VCs would divest their shares either in a private trade or in a public share market. Hence, the core business of VCs is buying, grooming and selling companies. Capital gain is the main source of return on VC investments. As the nature of the business demands, in addition to fund management skills VCs are expected to have specialization in one or more industries which would help them in identifying the right investment opportunities and in the post investment monitoring of the companies. The VCs charge a fixed ‘management fee’ from the investors for managing their funds and they would get a success fee called ‘carried interest’ upon successful exit. A standard management fee is around 2% of the committed funds and the carried interest is around 20% of the return (Gompers and Lerner 2004, Wong 2006). The investment agreement between the VCs and investors outlines the rights, responsibilities and provisions in detail (Gompers and Lerner 2004, Sahlman 1990).
However, there are variations in the way VCFs are formed and funds are raised. Corporations, financial institutions, universities and other private endowment funds often hire VCs who are therefore not required to raise funds. These VCs are known as corporate/captive VCs whereas the ones who raise and manage funds independently are known as independent VCs (Hellmann 2002). Being financial intermediaries, VCFs are then closely connected to the financial and macroeconomic system. The macroeconomic cycle and capital market outlook directly impact fund raising (Jeng and Wells 2000). Fund raising and investment activities by VC can also be impacted by corporate and capital gain tax as well as any financial and company laws in place (Keuschnigg and Nielsen 2000, Da Rin et al. 2006).

On the demand side, bankruptcy provisions and government funding of scientific research in the country can influence entrepreneurial activity and the demand for VC (Gompers 1994, Fan and Michelle 2003). At the same time, the dominant corporate culture and practices in the financial industry can influence the behavior of the VCs. A culture of innovation and entrepreneurship in the country can also stimulate entrepreneurial behavior and organizational culture (Hofstede 1885). Figure 1 provides a simple illustration of the VC industry system.

**Life Path Assessment**

Incubated by the government, VCI in Australia was born with the launch of the Management and Investment Company (MIC) program in 1984 to encourage investment in early stage technology ventures. The policy makers were encou-
aged by the prospect of VC backed innovations contributing to economic productivity. It was also envisioned that the demand for entrepreneurial capital which was not supplied by traditional financial intermediaries like banks created a financing gap that VCI could bridge. The MIC program was influenced by several government studies conducted in previous years with the aim of reducing the dependence on agriculture and enhancing domestic industrialization. Developing the VCI has been an integrated part of Australia’s industrialization strategy since then (Forsaith 1993, Lerner and Watson 2008).

The MIC program started with attracting retail investors with a substantial tax incentive. However, this encouraged tax benefit driven retail investors with little appreciation of technology ventures and management fee focused VC fund managers with inadequate expertise and incentive to generate sustainable return (Ryan 1990, Wan 1991). The program was eventually scrapped and with some modifications the Pool Development Fund (PDF) program was launched in 1992. A modified tax incentive scheme henceforward was complemented with direct injection of government funds into VC funds. Nevertheless, the PDF program performed dismally in terms of generating investment in technology startups (Golis et al 2009). Subsequently, in 1994 the AusIndustry program was initiated to focus on young and high-tech ventures (Proimos and Wright 2005). However, lack of participation from institutional investors forced the VCFs to depend on further government funding. The Innovation Investment Fund (IIF) program was then launched in 1998 with government funding support which gradually generated a group of experienced VCs (Cumming 2007). Consequently, the funds’ return started to improve which in turn began to attract institutional investors to VC funds. In early 2000s, to further encourage institutional investors from overseas the Financial Act was reformed and the provision of venture capital limited partnership (VCLP) was introduced. The market subsequently experienced an inflow of significant non-resident funds which enhanced fund raising and investment activities although a large portion of the funds was diverted to later stage private equity investments (AVCAL 2010). Hence, the development of a self-sustaining and mature VCI in Australia continued to be challenging despite the significant improvement since the late 1990s. Below we reflect on a few key industry trends depicting the development of the industry.
Table: 1 Number of Venture Investments

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>ICT</td>
<td>386</td>
<td>25</td>
<td>361</td>
</tr>
<tr>
<td>BMH</td>
<td>183</td>
<td>10</td>
<td>173</td>
</tr>
<tr>
<td>Others</td>
<td>528</td>
<td>49</td>
<td>479</td>
</tr>
<tr>
<td>Total</td>
<td>1097</td>
<td>84</td>
<td>1013</td>
</tr>
</tbody>
</table>

Data Source: Venture Economics

Table: 2 Investments by Stage

<table>
<thead>
<tr>
<th>Industry</th>
<th>All Stages</th>
<th>Percentage</th>
<th>Early &amp; Expansion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td></td>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>ICT</td>
<td>263</td>
<td>33.21%</td>
<td>246</td>
<td>38.08%</td>
</tr>
<tr>
<td>BMH</td>
<td>139</td>
<td>17.55%</td>
<td>121</td>
<td>18.73%</td>
</tr>
<tr>
<td>Other</td>
<td>390</td>
<td>49.24%</td>
<td>279</td>
<td>43.19%</td>
</tr>
<tr>
<td>Total</td>
<td>792</td>
<td>100%</td>
<td>646</td>
<td>100%</td>
</tr>
</tbody>
</table>

Data Source: Venture Economics

Table 1 shows the number of technology ventures which received VC financing. We have used the industry classification of the VentureXpert database identifying information and telecommunication technology (ICT) and bio-technology, medical and healthcare (BMH) related companies (Venture Economics 2009). The rest are categorized as ‘Other’. In first 25 years, 569 technology ventures received VC funds; 93.85% of those investments however took place since the late 1990s depicting a dismal growth of the industry during the first one and a half decades. In terms of stage and industry selection, 43.18% VC investments have been diverted to non-technology ventures as shown in Table 2.

Figure: 2 Venture Capital Fund Commitment & Drawdown
Data source: AVCAL Annual Reports
Figure 2 and 3 show a steady increase in fund raising and investment activities since the late-1990s. This most likely was influenced by the IIF program and financial act reforms. Consequently, the fund raising and drawdown activities show a steady growth reflecting large influx of non-resident capital in the 2000s.

STAKEHOLDERS AND SUSTAINABILITY OBJECTIVE

The industry has several key stakeholders who drive the sustainability programs. However, each of them may have different expectations from the industry’s viability. From a market perspective, the VCs are at the center of all industry activities while investors and entrepreneurs are both likely to optimize financial or strategic outcomes for their involvement. The investors could have both financial and strategic interest (Hellmann 2002). Similarly, the entrepreneurs can be motivated by financial return as well as ownership and control. From a public perspective, the government has been a key stakeholder in the industry playing an active role in creating it with the aim of promoting technology ventures and economic productivity. Hence, government policy would aim at continuity and development of the industry primarily to promote technological innovation and entrepreneurship. Hence VCs have to play a moderating role in managing expectations of investors, entrepreneurs and policy makers.
strong financial focus could force VCs to compromise the expectations of strategic investors and the government. At the same time, short term orientation could take investments away from venture capital to later stage private equity (Golis et al. 2009, Lerner and Watson 2008, Cumming 2007). Furthermore, there is a growing awareness in society about the socio-environmental consequences of business activities. The VCs face increasing pressure to consider ESG risk and opportunities in investment decisions. They are often market return driven which may require a pro-active role from policy makers to assure socio-environmental governance in the market space forcing VCs to align investment activities with public interest. In any case, one could argue that all stakeholders would like to see the continuation and development of the industry with an expanding scope and scale for its socio-environmental contributions. Given the industry mechanism and life path analysis, we can consider two key viability objectives. First, it should be able to establish a self-sustaining development path with reducing dependence on direct government funding which would require strengthening of the market forces, developing VC management capacity and enhancing entrepreneurial activities. Second, it should develop a culture of responsible investment practices across the industry so that environmental, social and corporate governance issues are integrated into the business culture.

**VIABILITY ISSUES AND STRATEGIES**

In the course of survival the VCI in the US developed certain practices with viability values. Being the market leader, the US has strongly influenced the development of many dominant industry practices in Australia. Hence, many of those practices could have been internalized in the industry. It is necessary that we recognize such practices and maintain them. At the same time, the Australian VCI has been going through its unique circumstances and challenges different from other countries. In order for the system to achieve viability, the industry has to embrace additional practices, policies and programs which can deal with internal vulnerabilities vis-à-vis external challenges. Finally, the industry requires confronting the changing circumstances and stakeholder demand so that it could co-evolve with the greater socio-economic system.
Industry Practices

The VC industry has developed a number of dominant practices especially in the area of financing to deal with the high risk associated with investments in early stage ventures. Such practices are prevalent in VCFs across the industry which might have strong viability implications. Collaboration and networking among VCs have become a prevailing practice at both formal and informal level. The most tangible from of collaboration is co-investment in a venture where two or more VCFs collaborate in venture selection, monitoring, management and value-creation (Bygrave 1987, Lerner 1994, Brander et al. 2002). Collaboration allows VCs to share information about potential deals minimizing investment risk as well as to access other VCs’ unique resources (Bygrave 1987, Manigart et al. 2006). Those who have specialization and experience are sought after and other VCs would value their endorsement in investment decision (Lerner 1994, Brander et al. 2002). Thus, there is a process of social capital creation within the industry and well-networked VCs tend to perform better than their industry peers (Hochberg et al. 2007). Co-investments take the VCs beyond arm length transaction as they share resources, expertise as well as a pool of fellow professionals including accountants, lawyers, advisors and underwriters. This leads to a network of relationships consolidating the market and industry system in both formal and informal ways (Stuart et al. 1999, Hochberg et al. 2007, Kogut and Orso 2007).

As they deal with limited funds to invest in risky ventures, VCFs have developed mechanisms and practices to make better utilization of resources for greater efficiency with resource based management and specialization based strategies. The venture capitalists tend to develop expertise in a specific sector, such as information technology, bio-medical technology and so on. Specialization allows them to identify better investment opportunities, reduce investment risk and optimize value creation (Brander et al. 2002). In addition to specialization, VCs diversify the portfolio risk and allocate their funds to multiple ventures. This would often force VCs to co-invest with others. Subsequently, VCs combine resource and expertise to create synergy in management (Manigert et al. 2006, Lockett and Wright 2001). The combination of specialization and diversification can therefore make better utilization of funds and expertise.
Venture capital funds usually have a finite size and life while investment opportunities keep coming to the market. Hence, VCs have to constantly balance funding between new ventures and follow on investments in previously selected ones. Every new and follow on investment decision has a substantial risk. Managing risk over the fund’s life is addressed by stage financing combined with the use of convertible securers which allows VCs flexibility in financing (Cornelli and Yosha 2003). Staged financing of ventures by the VCs is also accompanied by staged drawdown from the investors allowing investment flexibility and optimum cash holding. These risk management practices can be vital for the industry’s survival.

**Market Forces**

Market forces are often shaped by domestic economic conditions. Persistent government funding support for the VCI in Australia can substitute for weak market forces essential for achieving self-sustaining development. There are a number of demand and supply side vulnerabilities which the Australian VCI has been confronting (Regan and Tunny 2008, Proimos and Wright 2005). On the demand side, there has been a weak flow of deals because of two possible reasons. First, the level of entrepreneurial activates especially involving innovative technology is not large enough in Australia. Second, the entrepreneurs might not reach out to VCs for finance. To address the second issue VCs could make further effort to communicate with the entrepreneurs whereas the first cause could be rooted deeper into the economy. On the supply side, VCI requires investors with appetite for higher risk and longer investment horizon. Australia has particularly been struggling to find a group of inspired VC investors as low risk later stage private equity assets have often been attracting greater amount of investments at the cost of VC (AVCAL 1999, 2010). Further, there is also an acute shortage of experienced VCs who focus on technology start-up companies (AVCAL 2012). This can negatively impact investors’ confidence in the VC asset class which in turn would reduce the scope for VCs to gain experience leading to a vicious cycle of low activity equilibrium.

**External Environment**

The VCI is closely connected to the macroeconomic and financial system both
domestically and globally. On the financial side, investors have a wider choice of assets to invest in which could include stocks, bonds, commodities, real estates and venture capital. Thus VCs have to compete constantly with other professional investment managers for funds. This can influence their management style and behavior. For example, if the financial system is predominantly driven by quick return this could have a negative impact on the VC market which requires a longer investment horizon. If the VCs tend to accommodate investors seeking quick return, they might move toward later stage private equities. Issues like macroeconomic cycle, state of the capital market or market regulations can impact the industry activities over which VCs have no control.

In addition to the economic circumstances, there is a growing demand for responsible investments across the financial system (Christofi et al. 2012). Investors are now often required to disclose the impact of investment activities on society and the environment through sustainability reporting (GRI 2013). Hence VCs must deal with the risk and opportunities associated with ESG issues. However, the industry being a collection of competing VCFs with no formal governance structure must embed sustainability in the collective mindset of VCs. This could be achieved by developing complementary sustainability practices and culture. Successful and significant VCs could take the lead in developing an industry culture. Interestingly, in recent years a number of funds in Australia have joined the global movement of selective investment/disinvestment on socio-environmental grounds. The overall quantum of responsible investment funds has demonstrated a steady growth in the last few decades (GSIA 2012). According to RIAA (2013) eight out of top ten investment managers in Australia have signed the UN Principle for Responsible Investment (PRI); the total funds under management in responsible investment exceeded US$ 152 billion. Investment managers including VCs are likely to be influenced by the collective power of such funds driving sustainability programs. It would be interesting to find how and how much of the responsible funds are being channeled into the VC investments.

**CONCLUSION**

Putting sustainability concept into practice has always been challenging. Indu-
try practitioners often treat sustainability issues as something unrelated to their core business. However, contrary to the commonly held conception sustainability could be integrated into the core business activities to enhance business value (Dyllick and Hockerts 2002, Elkington 1994). In line with the approaches to corporate sustainability and responsible investments, in this paper VCI viability has been presented in two interconnected aspects which potentially can also be generalized for other industries. First, we have emphasized on the viability of the core industry activates such as raising funds for investing in young and promising technology venture. If VCs do not act as VCs the economy would be deprived of the private and social benefits of VC investments. The dominant financing models which evolved through industry practices have clear sustainability implications. Devising an industry viability program requires retaining such practices. This does not advocate for radical changes. In order for the industry to be viable, it has to deal with factors that can potentially disrupt the core business, such as temptations for quick return with a shorter investment horizon which may be incompatible with the spirit of VC investment.

Second, VCs must invest in a responsible manner which would require considering ESG issues in investment decisions. There is a growing demand for and supply of responsible investment funds. Consumers and investors often reveal their preferences in purchase and investment decisions. They appreciate products and services from responsible business outlets. The investors similarly tend not to invest in irresponsible and polluting businesses which might face repercussions from society and regulators. Hence, VCs have to consider responsible investment practices individually and collectively in the industry. Key industry players such as experienced and well respected VCs can lead the way in making clear commitment to sustainability.

However, there are limits to what industry practitioners can do. Hence, this requires appropriate policy interventions. Introducing sustainability policies and frameworks for industry practitioners in the form of corporate governance codes can be useful. Policy measures could also target complementing market forces and industry culture. In generating healthy demand for VC, public policy could address the education system and scientific research programs. It could further scrutinize the bankruptcy provision for start-up companies to encourage the en-
entrepreneurial culture. Reviewing the corporate tax and capital gain tax in selective areas can encourage investment in technology start-up companies. There is an acute shortage of experienced VCs in Australia with investment focus on technology start-ups which could be addressed by attracting experienced VCs from elsewhere while creating space for the local VCs to gain experience.

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IV. Environment Sustainability
BUILDING BLASTING AND ITS IMPACTS ON THE SURROUNDING ENVIRONMENT

INTRODUCTION

The construction industry consumes almost half of our finite and non-renewable resources, making it one of the least sustainable industries in the world. However, humans have responded to resource scarcity with technologies that allow them to continue manipulating the natural environment at the expense of reducing non-renewable resource for future development. In the construction and controlled demolition industry, the generation of ground vibration, noise, dust and flyrock has become a fundamental problem. When the vibration amplitudes remain at high level due to high-energy waves, ground vibration may cause damages to surrounding structures (Nicholls et al., n.d.). The prediction and monitoring of ground vibration factors have played an important role in minimizing the negative impacts on the surrounding environment.

While mining blasting is strictly regulated by the government, construction blasting is one of the least regulated even though it occurs in more densely-populated urban areas. Blasting practices occurring in cities are less common than those in the mine sites which can only occur when blast vibration does not exceed the current allowable safety limit as indicated by sophisticated monitoring programs, because the vibration damage can negatively influence both the localized and regional environment with increased economic costs.

Blasting technique is a process to fracture large amounts of rock to facilitate construction and demolition (C&D) while not affecting surrounding structures. Blasting in urban areas requires greater control of flyrocks, vibration and air pollution than in mining where it involves more extensive understanding of explosives, detonating and delaying techniques and the mechanism of rock deformation and failure. Good blast design and execution lead to successful demolition operations (Floyd, 1998). Improper or poor practices in blasting can have
a severely negative impact on the surrounding residential environment which brings high social and economic costs. The use of excessive explosives can trigger damages to the adjacent structures as a basic cause of flyrock generation. The amount of explosives used to demolish structures also has a close relationship with the scale of vibration.

Vibration has a smaller impact on local residents surrounding the blast site if they live in rural areas as explosive vibration is reduced with increased distance. In the densely populated urban areas, building demolition can be large and complex undertaking works (Chi and Zhang, 2010). While environmental damages caused by industrial or vehicle-related activities usually develop slowly over time, environmental changes caused by construction activities can happen unexpectedly and out of control. The towers of the World Trade Center collapsed on September 11, 2001, as a result of terrorist attacks (Collapse of the World Trade Centre, 2014). This event has had profound effects which changed our world and generated enormous debates. After the disaster, structural engineers began to consider the impact of blasting in urban environment in order to evaluate future demolition risks and possible consequences of human-made and natural disasters. After the two towers of the World Trade Center collapsed, many of the surrounding buildings also collapsed or were seriously damaged (including a building opposite the World Trade Center) leading to large economic losses and human tragedy. The catastrophic vibrations, equaling a small earthquake, caused other buildings close to the twin tower to collapse immediately after the terrorist attacks.

Although the architects and engineers of the World Trade Center are being criticized for not predicting the human-made hazardous events that can occur in buildings, architects, local government and construction companies all need to take the responsibility for accounting for such disastrous events before a new structure is built. As a consequence from this worst human-made disaster in the United States, the new World Center was built to be more resistant to future attacks including possible earthquakes or other disasters. Many buildings adjacent to the edges of Manhattan within the New York City, like the World Trade Center, were constructed on landfill and identified as highly vulnerable to seismic activity. The collapse of the World Trade Center on 9/11 is a tragic example similar to an uncontrolled demolition, demonstrating the dangerous nature of
explosive blasting as an unstable factor in complex urban areas. Urban migration and consumptionism have accelerated cities expansion worldwide. In densely populated cities, where the execution time and maximum dimension of the demolition blasting are strictly controlled to reduce unavoidable side effect of blasting, noise, vibration, dust and flyrocks arising from demolition and construction raise people’s environmental concern about the increased level of blasting activities.

**AN EFFICIENT APPROACH TO DEMOLITION**

Blasting operations are used in the construction and destruction of structures and buildings, their application in the urban area is extensive. Many beautiful buildings have risen up to be destroyed just a few years or decades later in the national reconstruction movement of China where most big cities are almost entirely reconstructed to accelerate economic growth and job creation. In terms of social and environmental scrutiny of blasting operations, it is not surprising that structural engineers prefer the mechanical method of demolition in order to avoid strict rules and regulations governing the use of explosive in blasting activities in city areas. Sometimes demolition can be as difficult as construction. At other times, demolition can be the most effective, cost efficient and safe method for deconstructing buildings. This point is best illustrated with the example of the demolition plan for the Heilongjiang province TV broadcasting station which was torn down on the 20th Jul 2014 in Harbin City, China. The building used to be the tallest free standing structure and a landmark of that city with 17 floors and over 7,000 square meters of floor space. However, as the thinness of the TV station building was only 10 m and its stairways length did not meet the safety requirements, representing serious fire hazard. Using a mechanical demolition method, a demolition company would need at least a year to demolish the TV station. The only possible method for completing the project is controlled demolition by using explosives where tremendous amount of energy is released by the falling building mass assisting the demolition. Explosives explosion must be under strictly controlled circumstances or disaster can occur. Apart from ensuring that the demolition companies can successfully manage the health and safety issues during the demolition projects, this must be
balanced with the need for the structures to collapse vertically - falling at an angle may cause significant impact on the surrounding area (Chesterfield, 2011).

In modern urban environments, in order to promote maximum utilization of urban spaces, two immediately adjacent buildings usually occur in city centers that can be at risks of being damaged during a major earthquake or nearby construction and demolition projects. In recent years, the public has become more aware of regulations and legislations relating to construction noise and vibrations when urban expansion and reconstruction have been encouraged to generate more employment opportunities and urban wealth. In fact, large government projects in fast developing countries such as China and India are causing increasing conflicts between citizens and state governments, due partly to the unprecedented scale of urbanization and also to the sacrifice of human and civil rights in exchange of wealth and power arising from massive reconstruction of urban communities.

Since its economic reform 30 years ago, China has become one of the fastest growing economies in the world. Numerous construction projects carried out in the country highlight its ambition to achieve a greater leadership role on the world stage. However, the rapid economic and reconstruction growth has an inevitable impact on the surrounding environment. It is therefore necessary to reduce the environmental effects of building construction and demolition in order to achieve significant cost reduction and avoid associated environmental impacts. Blasting in urban areas may particularly affect the performance of underground railway tunnels (approaching existing tunnels, paralleling tunnels in very short distance and crosscutting tunnels). Constructing a railway tunnel remains one of the biggest challenges in the field of civil engineering and the stability of the underground rock and tunnels can be negatively affected by the vibrations caused by explosion. Underground tunnels are designed to be strongly resistant to compression and vibration, and the entire underground structure is wrapped in thick mud of reinforced concrete. However, the heat and expanding shock wave due to surface building demolition can propagate and may cause rupture or deformation of the underground tunnels, especially in the areas of subway stations, underground shopping city or other commercial constructions underground (Fleetwood, 2010).
Below is an example demonstrating how dynamic blasting operations are limited by underground enclosed spaces. The demolition project of the New World Retail Complex in Shenyang, China is urgent for the city development requirements. The deterioration of the department store complex has become a safety hazard that may potentially cause damage to people who live close to the building. However, the possibilities of blast induced vibration that can adversely affect the adjacent Zhonghua Road underground shopping center tunnels, stopped the demolished project operations. When constructing underground structures such as underground shopping centers, it is essential to investigate the influence on tunneling structures from surface buildings’ construction and demolition activities and related noise and vibration. A better understanding of these phenomena is particularly valuable in urban areas where successful blast performance prediction and measurements are important for the influence of blast design parameters on ground vibration.

Demolition work causes two distinct and separate types of vibrations: blasting vibration generated by the explosion inside a building and that caused by the collapsed building falling on the ground. The first vibration effect is characterized by quick energy release and less influence of the surrounding area because only a small amount of energy goes to the ground floor and building foundations. The other type of vibration caused by the collision of the explosively demolished building and the ground is characterized by large energy release, long time duration and may result in underground utility damage, which has a bigger impact on the surrounding areas. In addition, when a building’s height and volume increase, the impulsive and transient vibrations caused by blasting demolition become larger and with higher impact.

When powerful explosive charge is loaded into the blasthole and converted into hot gases after detonation, it generates immense pressure strong enough to destroy structures (Blair and Minchinton, 1996). The propagation characteristics of blast-induced shock waves cause the rock particles to oscillate, which becomes the source of ground vibration (Jones & Stokes). As each blast hole explodes, a 'wave motion' is initiated which travels away from the targeted building. So if all blasting holes are being blasted, different seismic waves are created that could to be combined into larger waves or partially cancelling each other. The intensity of the vibration is usually measured by different types of monitors.
placed in strategic locations between the blasting site and residential areas to determine its effects.

Analysis based on peak particle velocity (PPV) can be used to predict and monitor blast vibrations. This is generally accepted as the most accurate indicator for evaluating the level of vibration from a particular blast affecting adjacent structures. The peak particle velocity varies with different blasting parameters such as maximum amount of explosives per delay (kg), explosive power and the distance between the blast and the point of interest (m). Other blasting data includes the average vibration amplitude which is usually used to determine safe exposure levels for humans. Analysis can be undertaken to examine the relationship between measured vibration performance and different blasting parameters for a whole implosion process. Such analysis allows predictions of the vibration values and their impacts in ground vibration intensity at different distances between the blast point and residential area. To further understand the relationship between blasting parameters, the maximum charge weight to be used at varying distances should be compared according to different international standards.

The PPV and other vibration parameters should be controlled within the damage criteria existing in different countries. Factors affecting blasting, such as geology and the dominant frequency of propagating seismic waves, play an important role in enhancing the intensity of the ground vibrations (Koca and Kincal, 2004). Due to stringent government standards for safe vibration limits for blasting and environment protection regulation of urban areas, demolition companies usually reduce the size of each blast and increase the use of smaller blasthole diameters to comply with relevant laws and regulations. During the blasting process and usage of explosives, in order to determine the relationship between different parameters of blasting such peak particle velocity, vibration frequencies, acceleration and peak displacement parameters, nonlinear estimation techniques should be used for further regression analysis.

A number of researchers have tried to determine the relationship between the vibration parameters, namely displacement, velocity, acceleration and frequency. Equation 1 is an empirical formula suggested by Ambraseys-Hendron (1968) for ground vibration prediction.
where PPV is the peak particles velocity (mm/s), Wd the maximum charge per delay (kg), R the distance between the blast and vibration monitoring point (m), and K and $\beta$ the site constants, which can be calculated by using multiple regression analysis. The site constants K and $\beta$ are found by plotting the graph between PPV values and SD predicted equations within 95% mean prediction interval.

The site-specific constants, K and $\beta$ need to be determined to predict the ground vibration intensity. Also PPV needs to be recorded in three directions from a series of blasts for the determination of these constants, from which a SD value can be calculated for each blast. A regression analysis can then be utilized to form an attenuation equation for a specific demolition site.

**BLASTING-PROBLEMS AND SOLUTIONS**

Blasting is a convenient and cost effective method in the building demolition industry that has some negative environmental impact which should be noted. The value of the explosive demolition method may be undermined by some blasting related problems including flyrock, premature blasting, noise, dust and misfire. Sources of uncertainty in blasting may include lack of understanding of the foundation rock masses conditions, groundwater, variation in geology within walls, design error (e.g. observation, computation simulation errors) and operational mining from the design. Accident data suggests that flyrock and lack of blast area security caused the majority of blasting related injuries. Analytical studies were conducted by Lu et al. (2000) who claim that almost 27% of demolition accidents in China were caused by flyrock. This is probably the most dangerous side effect of blasting and the most common cause of death or serious physical harm before it could be abated.

In a confined environment, the flying of rocks tends to move in all directions in the open space or towards the direction in which there is lesser load. The following contributing factors often are cited in the discussion of flyrock acci-
idents: incautious blasting procedure, excessive usage of blasting agents, improper blasthole design; they are also the contributing factors to over-fragmentation. Delay timing can become a serious safety hazard because the detonated explosive in the front rows of blastholes may accidentally destroy flyrock control device parts producing uncontrolled flyrock. A way to reduce the side effects of blasting involves covering with multilayer materials the surface of surrounding building components to create a passive flyrocks protection system. Protective materials can be used to reduce the presence and harmful effects of flyrocks in the surrounding area, they can also help slow down and deflect the movement of flyrocks. To avoid the danger of human injury or structures damage, the direction of the blasting face should not be towards residential areas or main traffic arteries around the demolished building. It is important to monitor any existing faults exposed in the surfaces of demolished buildings and structures that are likely to generate flyrocks after the blasting. In the area surrounding the blast site, warning signs should be placed to avoid blasting induced hazards.

Construction dust which arises during demolition threatens the natural environment and urban areas. Dust particles created by construction or demolition activities are a threat to people’s health and safety in densely populated urban areas, with higher risk of exposure to dust and less open space for dissipating toxic dust particles. Wet dust suppression, which provides reliable and efficient way of dust control, is a commonly used technique in the demolition of structures (Kim and Gu, 2002). With surface suppression, the main process of the technique is to wet the surface of the buildings to be demolished so that less dust is generated. This method however can be expensive in countries with high labor costs and may cause additional safety hazards by adding more weight to the demolition debris or contaminating the soil around the demolished building.

The accurate assessment of the influence of blast vibration can be difficult because of the lack of objective measurement in the blasting process. Surveys should be conducted to review preblast radius in order to determine the blast vibration limits. Although humans can detect ground vibration at a very low level (0.01–0.02 in/sec PPV), we are poorly equipped to distinguish between different magnitudes of vibration. According to industry experience, a low-level vibration limit can arguably cause greater overall environmental impact by prolonging project duration, increasing drilling noise and dust.
In a study conducted by Caltrans (Egan et al. 2001), it was suggested that after the efficient release of explosive energy, no damage is rendered at the 300 m distance and the matching pre-blast survey radius should be 100 m (328 ft), that is one third of the safety distance. Theoretically, all buildings within the 100 m pre-blast survey radius are subject to blast vibration damage. In construction design, a permeable criterion of residential building structural damage was set at 51 mm/s (2 in/s) as determined by the US Bureau of Mines (USBM). In order to find a balance between reducing the high cost for the assessment of the pre-blast survey radius and minimizing human perception of structural damage, some demolition companies focus on avoiding the damage of surrounding structures instead of demolition induced vibration and noise reduction resulting in residential complaints about noise and vibration disturbances with potential health effects. There is no guarantee that optimum standard safety distance can be set beyond which no complaint is found. To achieve the best tradeoff between human perceptions and economic considerations, structures particularly vulnerable to blasting vibration or any building of historical value in the pre-blast survey radius should receive special consideration.

Pre-blast surveys have been used to document the existing conditions in the structures prior to the start of the blasting activities. A generalized statement is used to list all defects identified during the survey and to ensure that no extra defects are caused by the blasting. It is essential to determine whether blasting would have caused the defects, such as shrinkage of concrete, slanted floors or deformation of building materials, to become more apparent in the surrounding buildings. According to site research experience, cracks or defects may not be caused by blasting if they remain uniform. After meeting the critical blasting safety standards, the time of the blasting operations should typically match the maximum noise levels near the demolition site to disguise any noise. As blasting vibration can negatively influence the operation of sensitive equipment in hospitals and other medical institutions where surgery is undertaken, official negotiation is necessary prior to the demolition.

**FACTORS INFLUENCING BLASTING VIBRATION**

Ground vibration induced by blasting is a serous problem in controlled demoli-
tion industry. The vibratory characteristics of the demolition include different and interrelated factors (Long, 2006) which are important to form vibration disturbance predictions in the blast design of the demolition work. The primary consideration must be the safety of the surrounding structures and local residents. Factors that control the potential damages caused by blasting include rock mass orientation, the site’s geological structure, presence of groundwater, the intensity of required rock fragmentation, appropriate blasthole diameter selection, arrangement of the holes in a suitable pattern to achieve maximum excavation efficiency, use of smooth blasting techniques and so on. If the ground vibration is larger than the permissible level, it has to be controlled. In blasting, the maximum charge per delay is usually restricted for control purposes. A large number of variable factors may influence the level of ground vibration. Each influencing variable has to be evaluated and suitably incorporated into the blast design for the control of ground vibration. In general, blast vibration is influenced by the following variable factors:

1. Safety distance: Building demolition is an inherently dangerous operation, even if occurring as intended, which can lead to negative impacts on the surrounding environment close to the blasting operation. During blasting, the shock and expanding gases produce a stress that decreases with longer distance from the blast hole. Therefore, determining the dangerous zone and safety distance from the demolition site plays an important role in ensuring economically successful demolition outcomes.

2. Geological condition: The quality of demolition blasting depends on reasonable local geological conditions involving limited varieties of visible discontinuities and flaws. Even the most conservatively designed demolition project may fail due to unknown geologic structures. Failure of considering the variations in the geological features of the demolished site may result in poor fragmentation, uncontrolled blast vibration and other damages. Explosive demolition on rock mass is affected by its shear strength of discontinuities that may, in the worst case, become clustered unstable planes of weakness.

3. Rain: Heavy rain may delay demolition work and complicate debris removal after a building is pulled down. Sometimes the sudden overflow of water from a drill hole can be a serious hazard its rate is high with high
viscosity. Adequately sealing of drill holes should be conducted before the start of demolition work to manage weather risks.

4. Efficient use of explosives: Ground vibration is limited by the quantity of explosive per delay used that can give rise to a strong initial shock wave. Efficient use of explosive can produce better fragmentation result at lower economic costs. As a consequence, the efficient use of explosives, along with proper selection of blast design parameters, is the key in obtaining the desired blast effect. Measures can be taken to minimize blast induced damages in surrounding environment, which include reducing the burden and spacing of the last row of the final blasthole pattern, shortening sub-drilling and avoiding the blasting wave moving in the direction of the surrounding buildings.

To further evaluate the influence of blast design parameters on blast vibrations, additional near-field vibration measures can be used to determine factors such as peak amplitudes, frequency spectra and energy distributions in order to modify the blast damage prediction approach.

**CONCLUSION**

The environmental effects of ground vibration and other blast related problems arisen from construction and demolition activities were consciously studied in the article. In order to decrease the negative influence of building blasting, which has become one of the most dangerous operations in the city area and can have substantial environmental impacts, the study of controlled blasting operations has become an important strategy in delivering successful projects results and improving urban development.

During the blasting process, the relationship between the measured blasting parameters is analysed to predict the level of vibration. In addition, for other blasting parameters such as peak particle velocity, vibration frequencies, acceleration and peak displacement parameters, nonlinear estimation techniques may be used for further regression analysis. The Ambraseys-Hendron (1968) empirical formula for ground vibration prediction is used for PPV calculation. Traditional
charge weight scaling analysis and the relevant prediction approach is also performed to develop the near-field blast prediction (Redpath and Ricketts, 1987). The analysis is effective for predicting the blasting vibration intensity for a specific location to eliminate structural damage.

Because all demolition operations have some undesirable environmental impacts which can be difficult to eliminate, it is important to ensure all blasting projects comply with relevant regulations and standards. Future studies need to focus more on the impact of the geology of the blasting area and each individual blast point should be statistically evaluated to derive the correct attenuation equation due to the complicated geology of the area of interest.

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EMBEDDING SUSTAINABLE DEVELOPMENT IN ORGANISATIONS THROUGH LEADERSHIP: A CONCEPTUAL FRAMEWORK

INTRODUCTION

Globalisation and the associated processes of global integration significantly impact all aspects of social, economic and political life. The business world represented by domestic firms and multinational companies is the major driver of global change and thus bears the consequences and criticism from the rest of society. Common topics, such as pollution, global warming, violation of human rights and corrupt practices, are just a few of the critical issues which influence and/or derive from unsound business practice. Sustainable development emerged as an important issue in the 1980s, but the lack of drastic changes in the business environment indicates that such a shift has never been more topical than it is now. Setting up a conceptual framework for sustainable development related models could facilitate the actions of entrepreneurs, innovation hunters, leaders and CEOs in a pursuit for improving their business practices. This article examines the main concepts that inform such a transition, namely corporate social responsibility and leadership for sustainable development and their capacity to create a new conceptual framework for business.

CORPORATE SOCIAL RESPONSIBILITY IN A GLOBAL WORLD

The concept of corporate social responsibility (CRS) refers to “the obligations of firms to society or more especially to those affected by corporate policies and practices,” (Smith, 2003). It emerged in the 1960’s as a reaction to adverse practices, such as corruption, large-scale pollution, labour discriminative, misuse of child labour and safety negligence. Often performed by multinationals, such
actions raised numerous environmental, social and human rights concerns demanding urgent reorientation of these companies’ policies (Lasserre, 2012). They were pushed by governments and public opinion to reconsider their business operation and assume responsibility for their actions in relation to all stakeholders. This was in strong contrast to Friedman’s concept of social responsibility according to which business must correspond strictly to its initial purpose of existence, namely the generation and increase of profit (Friedman, 1970). In many ways this attitude continues to dominate the business world based on the following assumptions…

1. Accountability can be traced only on a personal level; and
2. Shareholders invest their money for profit, not for social or environmental purposes.

Indeed many managers presently share this point of view and reject the idea of being socially responsible which they perceive only as a way to create a better image and improve the marketing of their products and services. More interestingly, concerns about the natural environment, ethical behaviour and social accountability and any imposed measures on companies, are seen as a call for hypocritical behaviour that does not align with that companies true business model. For example, young manager’s report the fact that in the name of profit they were asked to “do things that they believe are sleazy, unethical and sometimes illegal” (Badaroccc, Joseph and Webb, 1995, p. 8).

Challenged by rising terrorism, pollution problems and climate change, however, global and national companies are forced to adapt (either willingly or unwillingly), CSR related practices for their businesses. Unprecedentedly, present day global firms are required to meet the expectations and cover the criteria of numerous stakeholders. As a matter of fact, in most cases particularly in post-communist countries, employees and top-managers are compelled to promulgate socially responsible organisational demeanour (although they have to play “a double cross”) regardless of their convictions.

The particular parties pushing the firm to sustainable development through CSR procedures and practices can be precisely grouped as follows (classification adapted and amended to (Lasserre, 2012))…

1. **Local governments** – either as a business partner of the host country or as
an investor, a company has to adhere to the particular legislation and sustainable development policy of the particular country and its various municipality’s;

2. *International institutions* – such as the European Union, World Bank, International Monetary Fund, United Nations, etc. periodically re-evaluate and update their requirements and documentation on environmental, social and economic matters. Disregarding their restrictions or neglecting the new opportunities these institutions give to companies through sustainable development incentives, is more likely to result in business retardation;

3. *Industry associations* (e.g. CAUX) – fight for social justice, defend the rights of disadvantaged groups and encourage companies to stay in pace with the demands of society, thus making a good presentation of global companies relevant to market success. One of the focuses of the CAUX foundation for the year 2013, for instance, was to work towards a sustainable world, including presenting practical solutions for action at corporate level. CAUX aims to equip people with practical tools, grounded on moral and ethical framework, for use in their places of work (Bhagwandas, 2013). While conducting conferences such as TIGE (Trust and Integrity in the Global Economy), CAUX also targets organisational change in business and economic life, expressed in preventing corruption and abuse of power practices;

4. *Non-governmental organisations* – the most popular organisations in this group are Greenpeace, Amnesty International, Transparency International, Corpwatch, etc. These organisations and others like them advocate for the transparency and accountability of multinational corporations in terms of human rights (including business context), ecology, social injustice, etc.;

5. *Public opinions* – This includes media groups, educational and religious institutions. The ongoing process of digitalisation, increasing impact of forums, blogs, social media and online professional networks has a profound influence on economic and social life, becoming platforms for sustainable development discussions, which are relevant to businesses as well as the individual.;

6. *Financial markets* – innovations help companies to survive global economic crises. To compete successfully, industry leaders fund and then uti-
lize the research of non-profit organisations such as SRI International, allowing them to apply the principles of innovation and positive change into their enterprises (SRI, 2013).

FROM CSR TOWARDS SUSTAINABLE DEVELOPMENT

Undoubtedly, the “final destination” of CSR is the wellbeing of all stakeholders and the overall sustainable development of society. Presently, sustainability as a concept and practice is more topical than at any other time in history. A clear, business oriented formulation of the concept, has been given by Procter & Gamble, presenting it as “an activity that ensures a better quality of life for everyone now and for generations to come” (P&G, 2011). The classical framework for sustainable development was set in 1987 by the World Commission of Environment and Development: “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). Industries such as forestry, mining, oil, agro business, biotechnology, etc., usually bear a larger accountability with regard to sustainable development.

However, when considering a much broader context, each individual is responsible for the development of sustainable culture that would consequently lead to the development of relevant and valuable contents for the above mentioned framework. As stated by the World Business Council for Sustainable Development, the perfect contents should correspond to the following definition: “Development means the building of societies in which people are able to enjoy security, sufficient food, good health, decent housing, clean water and modern power supplies” (wbcsd, 2010). The Council also emphasises on corporate social responsibility as a path to sustainability: “Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large” (Holme and Watts, 2000, p. 8). The implementation of sustainable principles in the day-to-day life of employees is achieved through motivation and training. However, practicing CSR across all corporate levels might be a great challenge for CEOs.
In the present day world of social instability, economic crisis and ethics contradictions, workers need to see their leaders as role models. Sustainable models of conduct could be clearly demonstrated through stewardship behaviour. Stewardship in business is often associated with the obligations of individuals to protect the welfare of the company they work for. Therefore the notion can be defined as “the extent to which an individual willingly subjugates his or her personal interests to act in protection of others’ long-term welfare” (Hernandez, 2012). Related to sustainability, the stewardship behaviour is pro-social action intended to positively affect other people (Penner et al., 2005). This type of behaviour is not restricted to particular levels of organisation, because it is not related to a certain position, possessing institutional power. Thus, through leadership, stewardship theory could be enacted across all levels of the companies’ structure.

**Leadership for Sustainable Development**

But how does the manager guide subordinates towards stewardship and sustainable development behaviour? What is the key to successful change management in organisations as far as the interests of all stakeholders and society are concerned? Undoubtedly a crucial factor for organisational transformation is the leadership style, performed across all business unit levels. Leadership is commonly defined as “the process of inspiring others to work hard to accomplish important tasks” (Bird, 2010). The concept encompasses encouraging beneficial efforts and enthusiasm for positive development, as well as motivation for hard work and organisational commitment towards achieving a particular goal.

Leadership is important also for the establishment of a sustainable corporate culture, which is believed to be a system of shared assumptions that strongly influences the beliefs and behaviours of its followers (Schein, 2010). Research conducted by Schaubroeck et al. (2012) encourages leaders to engage all members of the organisation in ethical leadership development and thus embed their expectations concerning ethical conduct. The essence of ethical leadership is the socially responsible use of power (De Hoogh and Den Hartog, 2009); which assumes that it concentrates predominantly on social issues, concerning sustainability. A much more recent study however, reveals a current critical side of the
leadership business phenomenon. According to its findings only seven per cent of subordinates accept the behaviour of the senior management as absolutely consistent with their words (Maritz Research, 2010). The majority of the organisational leaders apply traditional leadership models, and yet they seem incapable of earning the trust of their employees or the support of society at large (Perucci, 2009). The loss of trust towards leaders and organisations (Bandsuch, Pate and Thies, 2008) turns out to be indicative of the need for a new approach to leadership in a world that seemingly lacks moral compass (Paine, 2003). The new model of transformative leadership proposed by Caldwell et al. (2012) appears to be an adequate response to the necessities of the corporate world. It integrates key features of six highly respected leadership styles that would enable leaders to incorporate its principles to earn the trust of employees and society. These are…

1. *Transformational leadership style* - enabling leaders to honour synergistic duties owed to both individuals and organisations (Burns, 1978). It is grounded on moral foundations concentrating on motivation through inspiration, power of influence, stimulation of intellect, and an individualised approach to situations (Bass and Steidlmeier, 1999). Transformational leadership triggers organisational excellence while motivating employees to seek out improvements to their company’s welfare on an individual, business-unit and society level. Followers are inspired to believe that they are able to create trust and a high performance work culture which produces increased profitability and long-term sustainability (Pfeffer, 1998). Apparently, the principles of transformational leadership set grounds for an integrated commitment to (1) individuals, (2) organisations, and (3) community (Manville and Ober, 2003).

2. *Charismatic leadership style* – stimulates a strong personal connection between leaders and followers, where the specific relationship is based on the conviction that the leader’s highest asset is their “extraordinary character” which inspires followers to achieve unprecedented results (Conger, Kanungo and Menon, 2000, p. 748). Charismatic leaders challenge people’s hearts and minds to change so that they become passionately committed to a great ideal - thereby helping their organisations to also fulfil their potential (Anding, 2005).

3. *Level 5 leadership style* - integrates the personal humility of the leader with
the need to achieve previously unrealised organisational outcomes (Collins, 2001). Leaders from this category are not aware of their contribution to the development of their organisation; moreover they prefer to acknowledge the efforts of others for organisational recognition (Collins, 2008). The personality of the Level 5 leader is illustrated as one who ‘‘looks in the mirror’’ when problems occur, and ‘‘looks out the window’’ to give credit to others for success (Singh, 2008, p. 740).

4. **Principle-centered leadership style** – based on values and principles, it focuses on governing oneself and honouring relationships with others that present leadership as a highly ethical obligation to honour implicit duties owed to others (Covey, 1999). This leadership perspective integrates a pursuit of high ideals for becoming a better person with an obligation to create a more productive and moral society. Covey (2004), Lennick and Kiel (2007) argue that moral leadership aims to add value today, to do no harm, and to contribute to the welfare of individuals and society in the future. The ethical obligations of the Principle-centered leadership style facilitate organisational change, serving as a foundation on which the justification and clarification of sustainable development can be built upon and explained to individuals not aware of its benefits.

5. **Servant leadership style** offers a broader view of the leadership concept, concentrating on the individuals’ and stakeholders’ interests. Defined as ‘‘providing leadership that focuses on the good of those who are being led and those whom the organisation serves’’ (Hamilton and Nord, 2005, p. 875), servant leadership is a good starting point for Corporate Social Responsibility training within the firm. The common description of servant leadership implies that the leader sets the needs, desires, interests, and welfare of others above his or her personal self-interest (Ludema and Cox, 2007). Acting as a responsible steward, the servant leader helps others to achieve their own goals and at the same time honours duties owed to individuals, the organisation, and to society (Savage-Austin and Honeycutt, 2011).

6. **Covenantal leadership style** focuses on the ability of the leader to act as a role model or an exemplar, and at the same time as a contributor to partnerships development within the organisation (Pava, 2003). This assumes generating a learning culture within organisations (Senge, 2006) and is a key
to the development of sustainability practices. Constantly seeking new truths, covenant leaders possess the power “to unleash the great human potential which is often dormant and silent” (Pava, 2003, pp. 25-27). Sustainability could be accomplished through innovation opportunities coming from culture of learning and creativity stimulation, where modern organisations create “disruptive innovations”, which are the key to economic growth (Christensen, 2011).

According to the research team of Caldwell et al. (2012), transformative leadership is an ethically based leadership model that integrates a commitment to values and outcomes by optimising the long-term interests of stakeholders and society and honouring the moral duties owed by organisations to their stakeholders. Transformative leadership focuses on sustainable development issues such as need for long-term wealth accumulation, achievement of terminal priorities through application of instrumental values, respect for business ethics and moral standards as a deontological (or duty-based) requirement etc. Although it can be challenging to apply the ethical standards and commitment to excellence of the transformative leadership concept, can have a huge impact on the sustainable development of organisations and society.

**EMBEDDING SUSTAINABLE DEVELOPMENT IN ORGANISATIONS: A CONCEPTUAL FRAMEWORK**

Based on the above presented concepts of CSR, stewardship, sustainability and various leadership styles, the author suggests an integrated approach for embedding sustainable development within organisations. (Figure 1) presents a conceptual framework, combining all sustainable development theories and ideas examined in the current paper. Called “Conceptual Framework for Organisational Sustainability”, this illustrative figure could serve as a guideline for managers and leaders, undertaking training at all levels of the organisation. Practitioners who would like to embed sustainability models and need clarification of the basic definitions, concepts and leadership perspectives within a business context, could also benefit from it.
The basic idea of the framework is to unite the sustainability related theories and ideas in a single model. Unleashing the potential of a leader to influence followers through a proper leadership style would facilitate change management and thus the company would excel in its innovation policy. Undoubtedly, organisational transformation would help it adapt to the pace of the modern business world, the expectations of the stakeholders and the society at large. Hence gradually, the personal skills and characteristics of a single leader could lead to sustainable development of the local economy which, consequently would redound upon the world economic, social and environmental welfare.

RECOMMENDATIONS FOR FUTURE RESEARCH

The presented framework focuses on the key concepts related to sustainable development within companies. However it does not examine the personality of the leader. Further research could be conducted on relevant characteristics of those working in business and the ways in which, their behaviour could be in-
fluenced through relevant leadership practices. Another relevant object for further research would be the correlation between leadership and organisational change management processes as well as, the role innovation plays towards the goal of achieving sustainable development within companies and wider society. Furthermore, exploration of the interrelatedness between transformative leadership style and organisational sustainability, along with research on the hazards involved in the process of employing leadership techniques on problem people, might also prove beneficial.

CONCLUSION

The high moral features and commitments to excellence of the various leadership perspectives (particularly the transformative leadership style) could have a huge impact on the sustainable development of organisations and society. Despite the collision between the world economy and environmental dilemmas, the globalization processes during the last twenty years has gradually set a new standard for organisational success. The findings of a recent survey and report conducted by global management consulting company Hay Group (2012), identify’s the most significant characteristics that distinguish the world’s most admired business companies from the rest. Amongst the critical factors enabling these enterprises to outperform is placing a high value on leadership; achieving success through people and building processes to sustain long-term performance. Evidently, sustainability issues should always be associated with leadership concepts and good practices in management of community and environment corporate social responsibility. Companies that concentrate on values and moral standards attract and retain the most talented people which in turn, contribute to their excellent presentation and prosperity in the long run. Global sustainable development definitely demands more and more companies capable of outperforming through implementation of innovative practices and application of evidently successful leadership approaches.

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INTRODUCTION

Self-reliance is the act of the relying on one’s (that is individual’s, society’s or nation’s) own capabilities and the concept emphasises the power of independence, creativity, originality and belief in generating strength and resilience (Marinova et al., 2006). In the past, when societies and nations were largely isolated, self-reliance referred to “self-confidence, reliance primarily on one’s own resources, human and natural, and the capacity for autonomous goal-setting and decision-making” (Changula et al., 1977: 4). Traditional communities worldwide survived entirely on their own efforts but this drastically changed with industrialisation, urbanisation and globalisation, including the division of labour within and across nations. People at large are now dependent on others for their quality of life. This allows those who are wealthier to consume more resources and generate more pollution and waste without equity considerations for present and future generations. Climate change is the ultimate manifestation of the consequences from industrialisation.

The title of the paper, namely self-reliance and living on the edge of climate change has a two-fold meaning:

a) living in the state of self-reliance or living self-reliantly is a tenable condition that inherently protects humans from their environmentally damaging socio-economic activities which are conducive to and responsible for unnatural human-induced climate change; and

b) self-reliant communities, such as the traditionally rural (especially in Third World countries) or non-urban (as is the case of Australian indigenous people in the country’s Outback) societies, are inherently sensitive to climate
change as their exposure to various natural hardships forces them to practice resilience as a way of life.

Self-reliance is a self-regulating way for practicing sustainable development in its full meaning, that is development which leaves nature unharmed, context – optimal resource consumption, and dynamics – ability to cope with the changing situation. Living on the edge of climate change implies (1) understanding the dangers and risks; (2) acting responsibly to avoid irreversible negative consequences; and (3) handling the uncertainty of the situation. These are the three aspects of self-reliance addressed in this paper.

UNDERSTANDING THE DANGERS AND RISKS OF CLIMATE CHANGE

Climate change is largely “attributed directly or indirectly to human activity that alters the composition of the global atmosphere” (Hardy, 2003:11). The growing convincing scientific evidence shows that the physical pressures on the natural environment are caused by socio-economic factors associated with a greenhouse gas (GHG) emissions intensive way of living of human population (IPCC, 2007; IPCC, 2013). The current climate change concerns publicised through the broad media (e.g. Al Gore’s movie An Inconvenient Truth) as well as the reports produced by credible sources (such as the 2006 Stern Review, 2008 Garnaut Climate Change Review and the latest 2013 IPCC assessment) have raised the awareness about the impact of greenhouse gas emissions and the prospects of a grim future if the current trends continue. The physical evidence from the 5th Assessment Report of the Intergovernmental Panel on Climate Change shows the different global contributions of various economic sectors based on 2010 total GHG emissions (IPCC, 2014) with energy and agriculture having the highest global warming potential (both on a 100- and 20-year time horizon).

It is important to understand the nature of contributions of these two sectors. The use of fossil fuels is the main factor behind carbon dioxide (CO₂) emissions which are strongly associated with industrialisation and developed countries, such as Australia, Canada and US, but also emerging economies, such as China. Although these nations are slowly moving towards a low carbon future with the
deployment of renewable energy technologies, there is a long way to go until carbon neutrality is achieved by the energy sector. The contribution of the agricultural sector is substantially linked to methane (CH\textsubscript{4}) and nitrous oxide (N\textsubscript{2}O) emissions which are associated with the livestock sector (Raphaely and Marinova, 2014b) and which have global warming potential exceeding hundred times that of CO\textsubscript{2}. Alarmingly, the trends of meat consumption are on a continual increase both in the developed and developing world causing many analysts to argue that the livestock sector alone will be responsible for a run-away climate change and increase in temperature above safety levels (Pimentel and Pimentel, 2003). Overall factory farming, industrial production of meat and excessive meat consumption however are characteristics of western type of diets (Raphaely and Marinova, 2014a).

High level of GHG emissions linked to energy and agriculture are typical for societies, or sections of societies, which do not have a self-reliant life style. They are also characteristic of modern development which disrespects ecological limitations and the rights of future generations. By comparison, self-reliant people possess skills underpinned by values and spirituality that enable them to pursue socio-economic culture in harmony with nature and its bio-systems’ carrying capacity. According to Baul Bijoy Sarkar\textsuperscript{1} of rural Bangladesh, the meaning of sustainable development lies in the human obligation to keep this earth within its sustainability integrity. Joshi (1993) calls this “development without destruction”. Bangladesh where large section of the population are still self-reliant is one of the lowest per capita GHG emitter in the world and also has the lowest per capita meat consumption.

If we are to properly understand the dangers and risks triggered by climate change, we need to correctly grasp its anthropogenic causes associated with both fossil fuel-based energy and excessive meat consumption. As these are trends associated with development which in turn is linked to increase in consumption, for any society to endorse self-reliance, it will need to be guided by Gandhi’s teaching that the “Earth has enough to meet everyone's need, but not everyone's greed” (Misra, 2007: 352). Harun Baul from Bangladesh words this

\textsuperscript{1} Bauls are mystics of Bangladesh who are as true animators, lead people on the path to spiritual transformation. We can see this in the lives of countless mystics – Rabia and Rumi in Islam; Hildegard of Bingen, Teresa of Avila, Meister Eckhart and Thomas Marton in Christianity; Mirabai and Ramakrishna in Hinduism; the Buddha and so many of his followers, like Thich Nhat and the Dalai Lama today (King, 2008:27).
as shunning superfluous consumption – consume less to let all in nature live and to live longer.

**TAKING RESPONSIBILITY TO AVOID IRREVERSIBLE NEGATIVE CONSEQUENCES**

Living on the edge also means constantly having to adapt to changing circumstances to avoid irreversible mistakes, such as falling into the abyss of climate change and pushing nature’s adaptive capacities beyond its physical boundaries. A retreat from the present state of living on the edge towards the comfort of the natural biosystems requires practising an ecologically self-reliant lifestyle. This change is particularly needed for urbanised communities whose way of life and consumption culture are subversive to nature. For these communities to re-establish their connectivity with and place within the ecological world, they need to not only respect nature but also take responsibility for their actions.

Responsibility is a core-shared or common human value (Bok, 2002). According to Judo-Christianity, humans are a superior species in creation and they have stewardship responsibilities in their activities. The Islamic concept of responsibility claims that humans are created as vicegerents on the earth and were given knowledge of all things, so that they can conduct the “right action” for the sustainability of all diverse things in nature. These special position and functions of humans in creation are referred to as being the “trustees” of nature (Chittick, 1983). With their powers comes responsibility to other living and non-living things. Aborigines in Australia also had spiritual attachment and a sense of belonging to the land (Burke et al., 1998). They “did not exhaust the resources of an area… The protective myths, rituals and attitude of land stewardship meant, in part, the right to share resources with others” (Bourke et al., 1998: 220).

A lot of destruction of the natural environment has been done out of ignorance (Hill, 1998:61). Only a century ago we thought that the natural world was limitless, infinite in its possibilities for our own use and that of future generations (Newton, 2005: 220). Industrialisation was a manifestation of the might of human inventiveness and effectiveness in generating useful consumption goods. The Green Revolution in agriculture was supposed to provide food for the starv-
ing millions across the globe. They both caused a sharp decline in the self-reliance of many communities as well as detachment from nature enticing farmers towards intensive practices through the application of mechanical cultivation, clearing of forest land, extraction of underground water for irrigation, application of chemical fertilisers and highly toxic insecticides, pesticides and herbicides, and the use of water-intensive mono-cropping. Subsistence agricultural practices were destroyed in countries, such as Bangladesh, which caused dependence on foreign aid and technologies (Schumacher, 1974; Willoughby, 1990) and diminishing sustainability prospects (Rogers et al., 2008).

The view of a boundless planet is no longer valid and nature is recognised as limited and vulnerable. Environmentalists argue that at the pace natural resources are used and the land and air are being polluted, “modern consumer societies will have rendered the planet uninhabitable within a century” (Jardine, 2004: 126–127). The projections of climate scientists about irreversible temperature changes within a business as usual scenario are even bleaker indicating a window of opportunity of less than ten years (IPCC, 2014). Despite this, we continue with irresponsible actions that seriously affect the future as well as the present. To address the consequences of our ignorance but also our arrogance, it would require taking the responsibility for the replenishment of natural resources as well as to ensure sustainable use.

Self-reliant rural and non-urban communities inherently take responsibility for the long-term health of the biosystems to which they belong and would not trade economic rewards in exchange of environmental and social degradation. Edwards (2006:115) argues that in order to convert oneself to develop a sense of kinship with and responsibility for all beings and things of earth, one must strive to get involved in the struggle for a more just and ecologically sustainable world that can be fulfilling and meaningful. This is possible by creating a way of life and a culture that provide the motives, stimulation and facilities to retreat from the edge of climate change, and to live responsibly.

**Handling the Uncertainty of Living on the Edge**

What is means to be self-reliant changes from time to time and place to place
depending on the varying climatic and socio-economic conditions. The dynamics of sustainable development is to build strong resilience enabling people to adjust to changing circumstances, including climate change, by means of mitigation, coping and adaptation. Amidst the ample scientific evidence of human induced climate change linked to unsustainable exploitation of natural resources and generation of greenhouse gas emissions in order to facilitate superfluous consumption, a retreat from the present norms of development is likely to be a solution. Sustainability practices within the concept of self-reliance need to be encouraged but what will trigger such a shift? What will counteract the new ruling demonic religion of consumerism (Esposito and Watson, 2000)?

The antithesis of the materialism of today’s consumerist society is spirituality – “our relationship with the sacredness of life, nature and the universe” (King, 2008: 16). Although spirituality currently occupies a precarious place in our world (Yust et al., 2006: 1), billions of people view it as a source of meaning, purpose, direction and devotion. From a practical point of view, spirituality can be understood as wisdom for living. Put simply, it is “explicit dedication to the meanings and values, the ideas and ideals, the beliefs and ethics that a person holds” (Helminiak, 2008: 16). Spirituality is the source of the will to act morally (Smith and Standish, 1997), an immanent activity aimed at affirming the moral values of people. According to Rogers et al (2008: 67), “76% of the world’s population live in the developing countries. People living in the developed countries are consuming 64% of the meat, 50% of the cereals, over 80% of the metals, 86% of the chemicals, and 92% of the cars. Americans consume 52 times as much meat, have 320 times the number of private vehicles”. The developed world has long given up self-reliance and with this it seems many universal moral values.

The search for sustainability is the main way of handling the uncertainty of living on the edge of climate change and it is based on the effort to lay hold upon goodness. Spirituality lies at the basis of the sustainability concept and is the only way to understand and explain why people care about future generations (Narayanan, 2007). Shaped by many influences in family, community, society, culture and nature, it propels the search for connectedness, meaning, purpose and ethical responsibility. Spirituality is an inherent part of humaneness (Yust et al., 2006: 8) as well as the intrinsic capacity for self-transformation involving
growth and change.

Climate change can be tackled by way of technological and policy solutions but at its core it “is an urgent moral and spiritual issue for all people of our world” (Hayes and panelists, 2008: 260). The way humanity handles climate change and any associated environmental and social challenges “will depend as much on human values as on scientific expertise” (Heyd and Brooks, 2009: 280). Many spiritual leaders, such as the Baul gurus Aziz Shah Fakir and Harun Baul, call for self-reliance as a way of reconnecting to nature and other people with a lifestyle of moderate consumption and low greenhouse gas emissions (Dauvergne, 2009). Similar values education is needed in the West (Aspin, 2002). In order to retreat from living in the edge of climate change towards the state of self-reliance, it is essential for humans to make living on their own accord pursuing an ethically righteous value-driven socio-economic culture in harmony with nature.

**IMPLICATIONS FOR POLICY**

There is hardly any policy framework at global level that can transform the present culture of wasteful exploitation towards a sustainable culture of self-reliant development. This policy vacuum exists despite acknowledging the threats of climate change. On the global political agenda there are many examples of

This could be a far-reaching task, in fact, next to impossible. Because whoever be in the making of a policy framework, it is highly likely that they would be members of nations who are widely blamed for working against nature. They are, along with other stakeholders who have conflicting interest, also pursuing the destructive development so deeply that they cannot even think for a retreat; for retreat is sacrificing. For instance, people who have commercial interest in fossil-fuel based energy business would not support a policy plan that would lead them to switch over to renewable energy industry. Rogers et al. (2008:68) support this view revealing that it is difficult for a person laden with materialism to climb the steep path to spiritualism for happy with less, even though it can lead to blissful sustainability. Berkhouse et al. (2003: 261) have striking evidence: “We will be working with our allies to reduce GHG, but I will not accept
a plan that will harm our economy and hurt American workers”\footnote{President George Bush, commenting on his administration’s decision to withdraw American support from the Kyoto climate change agreement, 30 March 2001.}. This verdict of President Bush reflects the American attitude, and has resulted into a situation that if everyone on the earth consume as much as the average American do, scientists estimate that we would need at least four additional planets to provide the necessary resources and absorb the resulting wastes (Environmental Career Organisation, 2006:357).

This is why values education that teaches how to balance socio-economic and spiritual life deserves to be part of foundation education starting from primary level through to all levels of the lifelong learning processes. In the absence of a proven technological solution to negative climate change impacts, and to prevent human made climate change by way of retreating from extravagant consumption culture; a values-driven policy network at national and global level is crucial, for it can act as a force of survival, but also as a power of change; and rightly developed spiritual awareness can extend to civil society, to economics, business, management, and good governance” (King, 2008:11).

In the Muslim tradition of Bangladesh, values education aiming at spiritual advancement is a lifelong pedagogy. Values education in the Hindu culture teach that if humans like to see themselves as superior, then with this comes as well a duty to protect anything under the food chain. Judging from this angle, Western animal-centred food production is an injustice to socio-economic and environmental injustice, while vegetarianism is linked to values-driven sustainability spirituality (Nesbitt, 2004: 30). Due to a lack of this spirituality development education in America’s educational policy plan, Wilks (2008:227) observes that “students from American suburbs grow up in a culture antithetical to genuine appreciation for the environment. Children use automobiles and may be ‘outside’ only for a minute or two a day, going from house to car to school, doctor or shopping…Students from this background nevertheless have kind hearts. Ethics and international development education can move students toward a deeper understanding.” Lemons et al., (1998:108) also observe that a lack in values education has led Americans to use about 400 litres/capita/day of water for drinking, cooking, washing, disposing of wastes, and other personal use.
This is much higher than the average of 90 litres/capita/day.

From the above orientation, the policy implications for developing people towards spontaneous departure from living on the edge of climate change to enter into a simply lived self-reliant lifestyle would need to stress on sustainability-intensive policy plan incorporating values education for education for sustainability as a lifelong learning process. This would intrinsically prepare people to go for self-reliant sustainable development practices – a departure from wasteful consumerism.

**CONCLUSION**

To live on one’s own accord in the midst of changing natural conditions and social environments, including the impacts of climate change and climatic abnormalities, is a central theme in self-reliant living. As such self-reliance becomes a flexible conceptual framework as well as a practical tool for human survival activities depending on the conditions of a given place at a given time.

We define self-reliance as a state that communities exposed to climate change can pursue to become sustainable. It implies living on their own accord pursuing an ethically righteous socio-economic culture in harmony with nature.

Self-reliance is a self-regulating edge for (of?) practicing sustainable development in its full meaning, context and dynamics.

The paper develops the above notions about the significance of self-reliance or self-reliant living in the contexts of living on the edge of climate change. It reveals that (re)achieving lifestyles in harmony with the principles of self-reliant way of living as indicated above can be a sustainable pathway to be a natural retreat from the edge of climate change, for

Both human and nature need to adapt various styles to sustain their respective sustainability. Self-reliance is an innate style of human living, while climate change is a style of nature’s sustainability maintenance. Both go hand in hand and exist in a synergistic relationship. More the global societies or nations can live self-reliantly in meeting their basic needs by means of sustainable production and consumption, more natural climate change scenarios are likely to pre-
vail. This implicates that livelihood has to be inherently carried out by art (i.e. self-reliance) and ethics (i.e. values) of production and consumption, both for present living and allowing future generations to also live sustainably. In other words, more easily human can coexist with nature, more it is likely that nature would reciprocate. Wisdom calls it: As you sow, so you reap. Thus, achieving self-reliance or self-sufficiency in itself is a form of resistance. It seeks to oppose to the present mode of economic and technological globalisation that tend to harm nature, and most importantly, rarely acknowledges the cultural wisdom and values, and wealth of the land in which globalisation operates (Bowers, 2006: 102).

It is only people who are rich in values and local wisdom are persuaded to lead their lives within the available renewable resources. Even when the available resources are in abundance, they would not still go beyond their traditional consumption culture/spirituality: ‘eat less to let others to survive; no over consumption and no wastage.’ This spirituality for caring nature in diverse ways including respect and naturalism for the sake of both present and future sustainability for all in nature is apparent in their way of living and thinking. Importantly, these practices tend people to live simply – the key to retreat from consumerism and addressing adversity by way of resilience improvement. According to Gandhi’s philosophy, living simply or simplicity refers to modest consumption and material possessions, resenting consumerism, for consumerism leads to: “The more I have, the less I am” (Joshi, 1993: 53).

Achieving self-reliant living is a iconic parameter of sustainable development. Sustainable development in terms of optimum or minimum ecological footprint is related to the total area of productive land required to support one’s lifestyle. Self-reliance clearly requires least footprint to produce local consumable resources. In other words, in order to live in the state of self-reliance, one needs to have a sustainable livelihood for oneself and also to support the livelihoods of others in one’s socio-environmental vicinity. Thus, self-reliance with simple living is essential for sustainable living and the prospect of sustainable development (Lemons et al., 1998: 136-37).

Judging from the above inputs, values vis-a-vis spirituality-driven simple and self-reliant living is clearly a way forward for retreating from the edge of cur-
rently occurring unsustainable development that can cause unnatural climate change. For the last two centuries, consumerism-driven international development with nature damaging technologies has created a lot of environmental and social damage. Changing the direction of development towards self-reliance implies commitment and work on capacity building. This has helped indigenous and traditional societies to survive in their changing environmental circumstances. In this age of rapid climate change, the traditional pathway to meeting survival needs to be encouraged globally in order to tackle unnatural climate change.

Finally, in the absence of a proven policy framework to prevent human made climate change, it is crucial to consider a policy network at national and global level that is capable of retreating people from the present culture of wasteful exploitation towards the culture of traditional self-reliant and simple living. A full-fledged comprehensive curriculum for sustainability education focusing on the know-how of acquisition of social, economic and environmental values for the countries that lack such education has to be addressed first. There is an utter urgency for this, especially to encounter the counter-productive aspects of the present form of education promoting consumerism.

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DECOUPLING ECONOMIC GROWTH FROM ENERGY CONSUMPTION IN CHINA’S REGIONS:
SUSTAINABILITY PERSPECTIVES

INTRODUCTION

The issues of China’s environmental degradation caused by the country’s unprecedented economic growth over the last three decades have drawn a lot of global attention. They are particularly serious because of the country’s rapidly expanding urbanization, industrialization and energy consumption. At present, China consumes 60% of the global cement, nearly half of the iron and steel and 20% of the world energy (IISD, 2013; UNEP, 2013), all of which are major contributors to CO₂ emissions. Domestically, many Chinese cities are suffering from heavy air pollution and smog (Xinhuanet, 2014) and 90% of China’s urban water bodies are contaminated (UNEP, 2013). This outdoor pollution not only triggers premature deaths but also significantly contributes towards global anthropogenic climate change.

There is urgent need for the most populous country to make changes to ease the burden on the deteriorating ecosystems. Since 2005, building a resource efficient and environmentally friendly society together with further economic growth has become a national policy objective for China that aims to decouple development from ecological deterioration. The term decoupling refers to breaking the link between “environmental bads” and “economic goods” (OECD, 2001:1) and “has often been used to refer to breaking the link between the growth in environmental pressure associated with creating economic goods and services” (Smith et al., 2010:31). Decoupling happens when the growth rate of an environmental pressure is less than that of GDP growth over a given period (UNEP, 2011) and this is consistent with sustainability goals of balancing eco-
nomic growth, environmental protection and social advancement (Smith et al., 2010).

Many countries in the world have been undertaking measures to achieve such a decoupling goal. The case in developed countries is related to the historical evidence of a strong correlation between population and economic growth, and increased resource use and waste production. For example, in Australia, due to the government’s recognition of the challenges of decoupling economic growth from increased environmental pressures, innovation and improved efficiencies in resource use have weakened the link between economic growth and energy use over recent decades (Australian State of the Environment Committee, 2011).

China’s case however is different, as its government has been concentrating mainly on economic prosperity. It took the country only three decades to achieve a remarkable economic growth through industrialization and urbanization and to become the world’s second largest economy. This however was achieved with continued expansion in resource use and environmental deterioration. Only recently has China started to pay attention to breaking the link between economic development and energy efficiency as a prime example of “decoupling” in achieving sustainability (UNEP, 2011).

According to Mattila (2012), there is no environmental Kuznets curve on a global level because of significant differences between countries and the fact that improved energy efficiencies are generally overcompensated by increased demand, production and consumption. This has also been the case with China where more efficient resource use has generated more consumption resulting in an increasing ecological footprint (GFN, 2012). Achieving decoupling needs substantial changes in government policies, corporate behaviour and consumption patterns (UNEP, 2011). Between 1990 and 2005 China reduced its carbon intensity by 44%, further 40-45% reduction by 2020 was pledged in Copenhagen, including the 17% reduction by 2015 in its 12th Five-year Plan (2011-2015) (UNEP, 2013).

China adopted national policies of building an energy-efficient and environmentally friendly society in 2005, which put its growth in a totally different perspective. There are signs of advances in the country’s ecological perfor-
mance. For the 2003-2009 period, the study by Jia et al. (2011) shows improvements in China’s dual goal comprehensive index, which covers 22 indicators for resource efficiency, environmental performance and socio-economic development (see Figure 1). At a policy level, developing a low-carbon economy plays a key role in achieving a better decoupling between economic growth and energy consumption. China is investing in green energy and remains the world’s leader in installed and new energy capacity (REN21, 2013). Since 2006, China has launched a massive energy saving reconstruction and has been successful with the growing urbanization (see figure 2) and pollution reduction program and a relative decoupling between economic growth and energy consumption has started to emerge.

The different provinces of China however are responding in their own ways to the overall decoupling challenge. Hence, the paper’s aim is to reveal the trends of decoupling economic development from ecological deterioration by analyzing the trends between regional GDP growth and energy consumption for 30 provinces for the 1990–2010 period. It then explores the factors influencing the decoupling trends and attempts to establish a national sustainability framework to inform further strategies and policies seeking a balanced economic development model.

Figure 1 Comprehensive Index of Dual-Goal (Energy Efficient and Environmentally Friendly) Society, China 2003-2009

Source: Jia et al. (2011)
MATERIAL AND METHODS

The carbon footprint is the main representation of anthropogenic emission of greenhouse gases (GHGs) from all countries in the world. It is dominated by the combustion of fossil fuel in the energy sector. China is no exception and the majority of total carbon emissions in the country is energy induced (Li et al., 2012). As CO$_2$ emissions increase with increased energy consumption, we use the latter as a proxy for the environmental impact of development. Analyzed against changes in GDP, this allows us to trace any transition to a low carbon and green economy. If China and its provinces attain CO$_2$ emission reduction through energy conservation while achieving economic growth, this would be seen as decoupling and transition to a green economy.

In order to examine the level of regional decoupling, we use the changes in energy use and GDP at a provincial level to calculate decoupling indexes (see equation 1) and analyze the trends between GDP growth and energy consumption. We examine the provincial decoupling indexes using time series data about China’s 30 provinces between 2003 and 2010.

\[
\text{Decoupling Index} = \frac{\% \Delta \text{Energy}}{\% \Delta \text{GDP}}
\]  

(1)

Resource consumption and waste emission are always coupled with economic growth. Economic growth and energy consumption however are the absolute decoupling condition because the higher economic growth is, the higher the energy consumption level is (Wang, 2010). In its 12th Five-Year Plan, China is determined to slow down economic growth, which generally should facilitate decoupling, particularly within the context of resource saving and environmental protection. In fact, decoupling is a hot issue for achieving a sustainability strategy of development (Lu et al., 2011).
There are various factors affecting the link between economic growth and environmental pressure represented in this study by energy consumption. Emission intensity is one of them and it characterizes in a quantitative way the state of the art in the technologies used for achieving economic growth. On the other hand are the soft factors that can influence the development path and encourage actions and policies towards decoupling. They include administrative regulation, environmental administrative accountability and regulations, economic policies, and the role of media and NGOs. Administrative regulation plays an important roll in decoupling because environmental administrative punishment can prevent new pollution sources and stop environmental anti-law behaviors. Economic means include measures, such as increases in pollution discharge fees to stimulate pollution control investment, administrative enforcement of environmental protection and pollution control. Information disclosure in the media can influence environmental protection behavior. Public participation and non-government organizations (NGOs) are also important in lifting the level environmental consciousness and behaviors. All of these factors are discussed in Section 4 after analyzing the results from the decoupling indices in Section 3.

**THEORY/CALCULATION**

Table 1 shows the decoupling index results for all Chinese provinces in the following three periods: 1990–2000, 2001–2005 and 2006–2010. Using a modified model of Vehmas et al. (2003), China’s provincial decoupling trends are grouped into three groups of expensive negative decoupling (index>1.2), ex-
pansive decoupling (0.8≤index≤1.2) and weak decoupling (0≤index<0.8) (see Figure 3). The provinces are further divided into three regions – eastern, western and central (see Figures 4, 5 and 6) which share some economic development similarities (Saw and Wong, 2009).

Table 1 Decoupling Index of China’s Provinces

<table>
<thead>
<tr>
<th></th>
<th>Decoupling index</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>0.3</td>
<td>0.5</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Tianjin</td>
<td>0.2</td>
<td>0.6</td>
<td>0.6</td>
<td></td>
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<tr>
<td>Hebei</td>
<td>0.4</td>
<td>1.6</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Shanxi</td>
<td>0.3</td>
<td>0.9</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>0.3</td>
<td>1.4</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Liaoning</td>
<td>0.2</td>
<td>0.5</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Jilin</td>
<td>0.0</td>
<td>0.7</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Heilongjiang</td>
<td>0.1</td>
<td>0.6</td>
<td>0.5</td>
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<tr>
<td>Shanghai</td>
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<td>0.7</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Jiangsu</td>
<td>0.2</td>
<td>1.4</td>
<td>0.6</td>
<td></td>
</tr>
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<td>Zhejiang</td>
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<td>1.3</td>
<td>0.5</td>
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<td>Anhui</td>
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<td>0.6</td>
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<td>Jiangxi</td>
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<td>1.4</td>
<td>0.6</td>
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<td>2.1</td>
<td>0.5</td>
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<tr>
<td>Henan</td>
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<td>1.4</td>
<td>0.5</td>
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<td>1.3</td>
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<td>Hunan</td>
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<td>2.2</td>
<td>0.6</td>
<td></td>
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<tr>
<td>Guangdong</td>
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<td>Chongqing</td>
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<td>0.7</td>
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<td>Sichuan</td>
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<td>0.8</td>
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<td>Ningxia</td>
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<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Xinjiang</td>
<td>0.4</td>
<td>1.2</td>
<td>0.8</td>
<td></td>
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</table>
Results

Figures 4 to 7 present the decoupling indexes for the Eastern, Central and Western regions. In the Eastern region, they are all U-shaped except for Hainan province; in the Central Region they are again all U-shaped except for Hunan province and in the Western regions – all U-shaped except for Guizhou province. Between 2001 and 2005, expensive negative decoupling between economic growth and energy consumption has taken place in most of the regions. In addition to this, a weak decoupling was witnessed during the other periods, which means that energy consumption increased when the economy grew, but the growth rate of energy consumption was slower than that of economic growth. Between 1990 and 2000, the national economic growth rate was relatively slow while the growth rate of energy consumption was dramatically decreasing. This was as a result from the drastic measures carried out by the Chinese government in 1996, including closing down enterprises with backward technologies, low efficiencies and heavy pollutants. The Asian financial crisis also had an impact on improved and the Chinese governments enlarged their domestic demand and encouraged increased investment. The newly built infrastructure and industrial development caused high energy consumption and high carbon emissions. Finally, between 2005 and 2010, a weak decoupling took place again with the steady economic growth and low-carbon energy strategies pursued by the Chinese government. For example, during this period, China effectively reduced its energy intensity per unit of GDP and has been leading the world in renewable energy technology investment. Most importantly, it decreased the energy need to produce a tonne of cement by 41%, which significantly helped reduce CO₂ emissions (UNEP, 2013).

From the top point of the reverse U curve on Figure 7, the Eastern provinces are on the top and the western are at the bottom; these are relating to the economic development in these regions (see Table 2). Between 2001-2005, the growth rate in the Eastern region was the highest, followed by the Central region with the Western region being the lowest. This economic growth was based on the high investment and high-energy consumption.
Table 2 GDP Growth Rates in China’s Central, Eastern and Western Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>1990-2000</th>
<th>2001-2005</th>
<th>2006-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern China</td>
<td>13.27%</td>
<td>13.06%</td>
<td>12.48%</td>
</tr>
<tr>
<td>Central China</td>
<td>10.65%</td>
<td>11.81%</td>
<td>13.55%</td>
</tr>
<tr>
<td>Western China</td>
<td>9.57%</td>
<td>11.21%</td>
<td>13.08%</td>
</tr>
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</table>

The results show that:

- During 1990–2000, 28 provinces experienced weak decoupling;
- During 2001–2005, only 7 provinces experienced weak decoupling and nearly half (14) of the 30 provinces experienced expansive negative decoupling;
- However, during 2006–2010, weak decoupling occurred in up to 97% of the provinces partly due to the stronger energy policies, green economy transformation and green investment.

In summary, the best decoupling happened in the north-east and south-west provinces and the worst performance in decoupling was experienced in the Eastern and Western regions. Overall, the decoupling performance is worse in the less developed and better in the developed regions. The economy grew quickly in the well-developed regions, but the decoupling was also significant as they increased their investment in industry upgrading, energy saving, emission reductions and improved their energy mix, improving their energy efficiency. On the other hand, the less developed regions lacked good technology and energy saving infrastructure, which lead to worse environmental performance. These regions pursued blindly economic growth ignoring environmental protection and any innovation was not able to compensate for ecological deterioration. The rest of the country can be seen doing well with simultaneous economic growth and environmental protection. The geographically uneven decoupling distribution is partly triggered by the uneven development of the economy and environmental protection. The decoupling trends in some provinces are positive, however it was very challenging for the world’s most populous country to achieve an overall decoupling everywhere.
Figure 3 De/coupling between energy consumption growth and economic growth

Source: Modified from Vehmas et al. (2003) and Ru et al. (2012)

Figure 4 Decoupling indices for the Eastern region
China cut GDP growth to 7.5% in 2012 for the first time after a prolonged period of high growth, to improve the quality of its development. Decoupling and managing the imbalanced development are currently major tasks of the country’s economic transformation. These disparities need to be adjusted for a balanced development to be achieved at a country level and the following sections elaborate on the factors which influence the level of decoupling, particularly...
from a policy perspective.

**Figure 7 Decoupling Trends in the Eastern, Western and Central Regions**

![Graph showing decoupling trends in the Eastern, Western and Central Regions.](attachment:image.png)

**DISCUSSION: INFLUENCING FACTORS FOR DEVELOPING A GREEN ECONOMY**

China’s decoupling of economic growth from energy efficiency has been happening in a very dynamic technological and socio-political environment. Its strict cultivated land protection policy was gradually effective easing the pressure on cultivated land from industrialization, urbanization and population growth (Guo and Yan, 2007). Strong investment in research and development, renewable energy and sustainable technology innovation is making the country to emerge as a green energy leader (Marinova et al., 2013). China adopted renewable energy feed-in-tariffs, subsidies and tax advantages as well as tough environmental rules to support the phasing-out of inefficient enterprises, terminate water pollution and increase waste management (UNEP, 2013; Guo et al., 2013).

This triggered reduction in CO₂ emission intensities per Gross Domestic Product overall and at the level of the regions. The country’s environmental policies and strategy to build energy efficient and environmentally friendly society is starting to produce a shift towards a more balanced regional development. Administrative accountability and pressure from the media and the public are also playing significant roles in this change of course.
Provincial CO$_2$ emissions intensities

All provincial CO$_2$ emission intensities declined significantly but at different levels between 2003 and 2011, but those in Western region still remaining much higher than in central and east China (see Figure 8). The two western provinces of Ningxia and Guizhou experienced the highest CO$_2$ emission intensity while Beijing and Guangdong provinces in eastern China achieved the lowest intensities. The overall distribution of China’s CO$_2$ emission intensities shows a severe regional unevenness with the mean of West China being more than twice that of East China, which indicates that the western provinces with poor economic development and less technical capability have worse capacity to develop a green economy. The central and western provinces had overall higher mean annual decrease rates with Jilin (in central China) and Guizhou (in western China) having the highest annual decrease rate in CO$_2$ emission intensities, which illustrates that the regional disparity is gradually reducing. Currently, China’s economic growth rate is slow in the East and fast in the West. An overall decoupling seems to be happening, however the regional trends tell a different story with some provinces performing well and others doing differently, which demonstrates the different levels of environmental management.

Figure 8 CO2 Emission Intensities (Kg/Yuan GDP) of China’s Provinces in 2003 and 2011

Source: authors’ calculation from NBS (2003, 2011)
Administrative accountability for environment

China’s first regulation of accountability for the environment was implemented in 2006 with companies that violate environmental standards facing serious consequences (Xinhuanet, 2006). It made Chinese officials from State administrative organs responsible after local governments fully implement administrative accountability for environmental protection. It is widely discussed in the media that environmental accountability is the key to pollution control. As local leaders were driven by economic achievements, in some cases they even played an umbrella role for large polluting enterprises. The fast industrialization and urbanization posed challenges to the governments’ ability to administer and control pollution. It was difficult to stop pollution without changing the assessment criteria for the leaders and punishing those responsible for serious environmental incidents.

In 2010, China started to promote administrative accountability for the environment as a standard for assessing the leaders’ achievements. However, there is still need to make the responsibility system mechanism more mature in order to easily determine responsibilities for environmental incidents. Local governments do not have enough power to undertake accountability. Better regulative arrangements, a more effective accountability system and supervision strengthening are still needed to boost the implementation of environmental accountability.

In addition, governments should grant power to China’s National People’s Congress for receiving information, interpellation and investigation because it is the country’s major accountability body. There is also urgent need to establish responsibility mechanisms for the overall plan, coordination and collaboration between local governments to prevent protection during environmental accountability. Furthermore, incentives and constrains mechanisms for enterprises’ environmental behaviours should be established, applying the full power of the law through administration, economic and technological measures that encourage them to take environmental responsibility.

The role of media and public participation

In order to achieve the decoupling goals, environmental publicity and education
need to progress further. In 1996, China undertook the National Environmental Publicity and Education (1996-2010) program (National Environmental Protection Bureau et al., 1996) to improve environmental education and encourage citizens to protect the environment. Such educational programs are required more frequently to strengthen the nation’s environmental awareness and should be involve adult education, the mass media and activities targeting particularly governmental agencies, industries, business people and pollution producers. Environmental training programmes, such as developing the low-carbon economy, should be tailored for environmental experts but also for scientific, technological and managerial personnel. These efforts will gradually increase people’s environmental consciousness. Achieving a certain level of public environmental awareness is vital for China’s transformation towards a green economy within energy efficient and environmentally friendly society.

The media play a significant role in China for increasing environmental awareness. In particular, the newspapers owned by the governments have been performing this role increasingly better. The mass media not only encourage public concern for environmental issues and actively create public awareness but also trigger most needed responses. For example, information discloser is becoming an important method for pollution control and encourages enterprises to take more environmental responsibility. After an incident of environmental damage is disclosed in the media, this generates a lot of public opinion pressure on the polluter as well as on the local government to which they will have to respond by taking appropriate measures for improvement. A positive environmental publicity on the other hand plays a significant role in public environmental education and guidance. The topic of environmental protection has increasingly been covered by media reports (Guo and Marinova, 2010) in all provincial newspapers, which generate environmental publicity, facilitate supervising and disclosing incidents of environmental damage. The number of environmentally related news/articles in each provincial newspaper reflects the level of the region’s environmental information disclosure.

Non-government organizations started to play a great role in decoupling GDP growth from environmental pressure. For example, Green Peace pushed the People’s Congress to discuss and adopt laws and regulations to control pollu-
tion. It is widely suggested that stringent environmental laws push “green transformation” and this has been included in the 12th Five-Year Plan (Ifeng, 2010). The public is a leading force in environmental protection, according to the Green Book of the Environment produced by the Friends of Nature NGO. More residents are becoming involved in environmental protection and they have learned how to effectively affect authorities’ decision-making. Now people believe it is their natural right to be involved in environmental protection and that their participation helps make government’s decisions more efficient (Chen, 2012). The public sees its role in taking action for environmental protection before polluting incidents happen.

Enhancing positive attitudes and behaviours towards the environment is very important and this includes education on carbon reduction and energy efficiency. The massive carbon emissions generated by China require its citizens and industries to have a sound level of environmental awareness. There are many ways to deliver such necessary education, for example planning training courses for targeted groups of people. The promotion of energy efficient and environmentally friendly society can help to sustain a quality economic development. Environmental education helps raise China’s environmental standards because and can help a smooth transformation towards a green economy.

CONCLUSION

China’s high economic growth has attracted a lot of global attention. However, the global communities also criticize the country for its environmental deterioration, particularly for emitting the largest amount of CO₂ related to anthropogenic climate change. As the world’s second largest economic power, China’s green growth is vital to the global sustainability achievement.

It is challenging for China to balance the sustainability goals of developing a green economy, ensuring ecological protection and accountability with improving people’s education and encouraging public participation. According to UNEP (2011), by 2050, the global population would need minerals, ores, fossil fuels and biomass per year three times its current appetite unless the economic growth rate is decoupled from the rate of natural resource consumption. China
realizes that it will have to pay the price for the environment and resources due to its fast economic growth but needs to do this through nationwide energy saving and pollution-reduction programs. Although UNEP (2013) suggests that China has advanced in developing a green economy; the analysis of energy efficiencies shows significant differences between regions.

Uncontrolled economic growth can cause the loss of ecological resilience, therefore government administrations need to provide the right protection incentives. Azer et al. (2002) highlighted as early as a decade ago the importance of decoupling policies, such as price incentives (higher prices on emissions via taxes or permit trade systems), technology development incentives (R&D and niche markets) and regulatory energy efficiency and emissions standards measures. The more efficient and more proactive the government's action towards environmental protection, the better it will be for achieving decoupling. The level of China’s decoupling between economic growth and energy consumption changes dramatically with different macroeconomic situations and policy adjustments. While the current weak decoupling continues, there is a long way to go to achieve strong decoupling across all provinces and regions.

The imbalance in China’s development means that there will be more development opportunities for the less industrialized areas. Although technology transfer from East China to the central and western parts of the country can sustain the resource endowment in the East, it will put ecological pressure. Therefore there is urgent need for these regions to improve awareness about energy saving and environmental protection in order not to repeat the old development mode of polluting first and cleaning up later. It is encouraging that China’s 12th Five-Year Plan includes measures such as upgrading of industrial structures, improving energy efficiencies and reducing emissions, promoting green growth. Achieving sustainability, environmental protection and a green economy should be developed from concept to real actions to decouple the link between economic growth and environmental pressure in every region and province of China.

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AUSTRALIA’S  
LOW-CARBON ECONOMY AND INDIGENOUS PEOPLE

We are like tenant farmers chopping down the fence around our house for fuel when we should be using Nature's inexhaustible sources of energy — sun, wind and tide. ... I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that.

(1931 conversation with Henry Ford and Harvey Firestone; in Newton, 1987: 31)

If the world moves much more quickly into a green horizon, we end up investing in other (low carbon) things, so (you should) value our company as much on our skills as you value (it) on our options for development.

(Andrew MacKenzie, BHP CEO; ABC RN Breakfast, 25 November 2014)

INTRODUCTION

The drive for higher efficiency technologies has always been a part of human innovation – however the development of “low-carbon”, “green” or “sustainable” technologies on an economy or global scale is a relatively recent phenomenon. It is a direct response to environmental degradation and the associated human and ecosystem costs of industrialisation and in particular, the burning of fossil fuels.

The shift to low carbon technologies and economies is recognised as a significant techno-societal transformation (Newton, 2008, *et al*). According to the
United Nations Environment Programme, a green economy “results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive” (original emphasis, UNEP, 2014; n.p.).

This push for change from the business as usual practices has been called the global Green New Deal (UNEP, 2008) and a Global Green System of Innovation (Marinova, 2009). It has also been a major part of many government stimulus packages in response to the 2007 global financial crisis and is now leading the policy agenda for the forthcoming United Nations’ Sustainable Development Goals which are expected to be action-oriented and deliver real change (UNDESA, 2014). In 2005 the global market for environmentally-centred technologies was estimated to be US$653 billion (Environmental Business Journal, 2006) and despite the major economic turmoil in the years to follow, it was expected to grow by more than 7% per year to reach US$900 billion in 2010 (http://logisticstoday.com/greensourcing/us-environmental-firms-0309/). The European green business market alone is predicted to reach EUR 3.2 trillion by 2020 (http://www.rolandberger.com/). The global green energy market, covering solar photovoltaics (PV), wind energy, hydroelectric power, biofuels and geothermal energy, reached USD 470.10 billion in 2012 and is projected to further grow at a compound annual rate of 8.3% between 2013 and 2019 (Transparency Market Research, 2014).

As part of the emerging global green economy, any country requires new expertise and capabilities as well as adjustment to current policies and practices in labour market skills development. This is particularly the case for Australia’s open market economy where many industries have already identified skill shortages and the need to bridge the knowledge gap as a challenge to sustainability, e.g. Jones Lang LaSalle’s 2007 and 2008 reports, respectively about the building sector and sustainability reporting (Wallbank and Price, 2007; Wallbank and Conceicao, 2008). The Australian Conservation Foundation and Australian Council of Trade Unions estimated that by 2030 an additional 500,000 new jobs would be created across just six industry sectors: renewable energy, energy efficiency, sustainable water systems, biomaterials, green buildings, waste and recycling (ACF and ACTU, 2008).
While Australia’s economy and labour force are slowly transforming towards a more sustainable future, the marginalisation and obstacles faced by its Indigenous people remain largely unchanged and the fact remains that “Indigenous Australians have much higher rates of unemployment than other Australians. They are also more likely than other Australians to be long-term unemployed or discouraged workers” (Jordan and Mavec, 2010, p. iv). The challenges faced by Indigenous Australians in the rapidly developing green economy are two-fold: firstly, mainstream education continues to lag in the delivery of programs to meet emergent technologies and industry sectors and is restricted by its requirement to meet the demands of existing, traditional industries; secondly, Australia’s education and labour market systems continue to exclude Indigenous knowledge, perspectives and practices (Beckford et al., 2010) and are blind to the social order and obligations of Indigenous Australians. The sharp divide between Indigenous and scientific knowledge (Agrawal, 1995; Briggs, 2005) has not only marginalised Aboriginal wisdom but also made the Western knowledge and learning system unattractive and unsuited for many first nations people.

If the situation continues unchanged, the gap between Indigenous and non-Indigenous Australians is destined to widen and the green economy will perpetuate the spiral of marginalisation for the most disadvantaged people within Australian society. The millions of words written and spoken in advocacy for Indigenous Australians will be simply more words if this most profound change is not grasped as a unique opportunity for the first Australians. It is grossly socially wasteful and economically inefficient not to adopt and invest in strategies that offer major improvements to the economic participation of Indigenous people. In the context of the UNEP perspective (UNEP, 2014), Indigenous participation in low-carbon technologies and green jobs may rank in importance of opportunity alongside citizenship (the historical struggle of Australian Aboriginal and Torres Strait Islander people to obtain citizenship rights, e.g. Davidson, 1997) and native title (the recognition that Australian Indigenous people have rights to their land as traditional custodians, e.g. Russel, 2005). This is even more the case when Indigenous science and ecosystem knowledge are considered as part of the transition to a green economy. The reminder of this paper explores what the green economy means to Indigenous people with a focus on
the energy sector.

**GREENING AUSTRALIA’S ENERGY SECTOR**

The Intergovernmental Panel on Climate Change (IPCC) released its latest Fifth Assessment Report (IPCC, 2013), confirming previous IPCC warnings about the consequences of continuing global energy and industrial production on a “business as usual” basis. The electricity and heat production sector is responsible for 25% of all 2010 greenhouse gas (GHG) emissions, the equivalent of 12.25 Gt CO$_2$e (IPCC, 2014). Moreover, on a 100-year time horizon, the GHG emissions generated by the sector (as at 2010) have the highest global warming potential, namely 24% of all GHG present in the Earth’s atmosphere (IPCC, 2014).

The global energy sector however is already reacting to these warning projections. A fundamental shift is underway in energy systems, driven by three inter-related forces of change:

- energy input costs clearly rank with traditional measures such as scale, labour, logistics and market access as a determinant of viability in existing and proposed economic activity (The Economist, 2013);
- climate change is imposing costs on agriculture, energy, transport, construction and other sectors of all economies (IPCC, 2007). Energy production and use, especially in high emission industry sectors and industrialised economies, are broadly recognised as compounding these costs through accelerating the rate of change to global climate and specific eco-systems;
- low-carbon technologies are closing the gap in unit energy costs with the ‘dirty’ fuels of coal and oil and the ‘transition’ fuel – gas (Global Commission on the Economy and Climate, 2014) as well as changing the very nature of supply and demand across Australia’s electricity industry. According to the Global Commission on the Economy and Climate (2014), renewable energy has changed from prohibitively expensive to a realistic option and in some markets these green technologies are already cost-competitive.
Aboriginal Australia saw potential opportunities in the developing green economy quite early with the Australian Indigenous Chamber of Commerce declaring in 2009 that “momentous changes in the political and economic landscape both within Australia and globally provide opportunity for new concepts and approaches to Indigenous business enterprise... the challenges and opportunities created by Climate Change... provide unprecedented opportunities for Indigenous Australia.” (Mundine, 2009).

Despite these trends, the Australian Government is still supporting a fossil fuel based economy and the country continues to be one of the highest per capita CO₂ emitters. Even as international markers continue to point to an energy revolution, Australia appears to be stuck on a policy roundabout as a confused player in the reform race without a clear position on carbon reduction. The month before the IPCC’s latest dire report was released (IPCC, 2013), Australia’s new Liberal-National Government confirmed its pre-election policy of ‘direct action’ (Liberal Party of Australia, 2013) by seeking to close the independent Climate Commission and abolish the carbon tax and carbon market facilities established by their Labor predecessors.

While many industries are yet to assess their prospects in this carbon-constrained future, the response from the global energy sector to Australia’s ‘direct action’ is to look for investment grade opportunities in Europe, USA, China and South America where there are longer-term policy positions and large-scale renewable energy projects (Parkinson, 2014). This however does not imply that the Australian energy sector is remaining unmoved. On the contrary, it is fast changing with the contribution of the Australian Renewable Energy Agency (established under Labor) rolling out new investments in wave energy and geothermal power as well as the millions of ordinary households opting for PVs on their rooftops. Among the new developments funded by the Australian Renewable Energy Agency is the A$11.9 million solar energy project for the remote Doomadgee Aboriginal community in north-western Queensland (AREA, 2014). This PV investment by the mums and dads of Australia is changing the national grid, one day at a time and having massive impacts on demand, investment and the expansion plans of coal-fired power station operators everywhere across the country. These tens of thousands of micro-power stations are causing
such radical and profound change that Australia faces unprecedented oversupply of energy (Mark, 2014). The latest forecasts for South Australia show the state will not need a new ‘big’ station for at least 10 years (AEMO, 2014); the situation is similar in Western Australia and the other parts of the country.

While climate change continues to be characterised in the Australian public debate as a subject for ‘believers’ and ‘deniers’ – hardly the basis for rational scientific discussion - new energy technologies are being adopted and rolled out representing new business opportunities. Energy production and use will shape economic and social change throughout the 21st century. The low carbon economy is already showing its transformative nature in underpinning investments in new technologies, businesses and regions as well as creating new labour market demands. Aboriginal and Torres Strait Islander people, who represent only 3% of the Australian population (SCRGSP, 2014), are also becoming part of this low carbon future. The last section of this paper provides some Indigenous responses to the imperatives and politics of climate change.

INDIGENOUS RESPONSES

The monumental global and national changes offer very real challenges and opportunities for Indigenous participation, particularly regional Indigenous communities, in Australia’s low carbon economy. As a result from improvements in health, high school completion and post-school qualifications (SCRGSP, 2014), Aboriginal and Torres Strait Islander people are better set to participate in the Australian economy not only as employees but also on managerial positions, including of Indigenous businesses. Compared to 2002 when only 32 percent of Indigenous adults were earning their income through employment, by 2013 this share increased to 41 percent significantly reducing their dependence on social security support (SCRGSP, 2014).

The new low carbon economy is continuing to offer opportunities for this because of the following factors with emerging trends:

- Geography – energy production is shifting to regions (EcoGeneration, 2012 and 2013) with abundant renewable energy, including the Outback with higher concentration of Indigenous population; demand for new workers
and skills in these regions follows;

- Traditional land ownership and knowledge – Indigenous Australians maintain a strong connection to their homelands or traditional country (Biddle and Swee, 2011); employment and business opportunities have started to flow from rights in and use of these traditional lands and knowledge;

- Skill development – increases in Indigenous education and training rates together with advances in business development have started to allow emerging opportunities to be captured.

**Geographical shift**

Whereas the Australian industrialisation was significantly influenced by 19th century patterns linking coal-based energy and production, a significant proportion of renewable energy sources in Australia are located in rangelands, regions and coastal zones. Carbon storage and carbon off-set arrangements are also expected to further expand into forests, woodlands and soil carbon strategies beyond existing power stations and plantation timbers. These new production sites are more likely to involve Indigenous people as residents, native title owners and operators of corporate Indigenous businesses. They have started to provide a wide-range of new economic opportunities for Indigenous people and innovative avenues available for the financing of clean energy technologies and projects as they move to a commercialisation stage (EcoGeneration, n.d.).

Marcia Langton, Noel Pearson and Warren Mundine have emerged recently as the three most influential Indigenous voices in Australia. They have all re-positioned themselves over the past decade as strong reformist conservatives rejecting the policies and institutions of ‘aid development’ and demanding a new kind of Indigenous self-determination based on personal responsibility and eschewing the collective ownership of historical rights. This includes challenging the limitations placed on entrepreneurial use of land and resources established by native title and land rights laws (Langton and Longbottom, 2012) allowing a better participation in the low carbon economy. Agreements between companies and traditional owners of the land can be used to build capacity, negotiate benefits and establish long-term relationships between the parties taking into account that the costs of energy projects are disproportionately borne by local people and communities.
Traditional care for the land

Due to the historical relationship developed between successive generations of Indigenous people and the land they inhabit, “a holistic traditional scientific knowledge of their land, natural resources and environment” has been maintained (UNEP, 1992: n.p.). These knowledge and understanding of the local ecology represent a living symbiotic relationship with the land and waters of their homeland estate (Cook, 2010; Morgan, 2010). In fact the link between indigenous landholders and the land, which is traditionally referred to as “country” (Weir et al., 2011: 4), is so strong that the land itself becomes part of who they are. For example, a Gamilaraay man from Queensland might identify himself as: “I am a Simpson from Gamilaraay country” or “The Narran lakes area is my country” (QCAA, 2008: 1).

Another strong Indigenous voice in Australia is that of the North Australian Indigenous Land and Sea Management Alliance (NAILSMA) which has clearly formulated the pathways for meaningful engagement in the low carbon economy, including among others:

- “acknowledge and work with customary connections between people and country;
- work with communal title to land and find new ways of securing capital for enterprise creation;
- support local, bottom up planning for generating incomes from Indigenous land;…
- recognise and give weight to new commercial uses like carbon farming and their relationships to orthodox use in land use planning;
- require existing and new industries seeking public support and approvals to work collaboratively for Indigenous enterprise and employment;
- emphasise initiatives that draw on the strengths of Indigenous culture and work with rather than against cultural norms” (NAILSMA, 2012: p. 26)

The use of fire is a very interesting example of Indigenous contribution to the Australian green economy. With deep understanding of the seasonal changes which affect weather patterns, wind, temperature and vegetation growth of, Aboriginal people in Australia use fire with a lasting effect on country ensuring
reduction in dangerous fuel levels from overgrowth and stimulation of plant propagation and growth for carbon storage (Armstrong, 2010).

Skill development

The economic and social change in Australia geared towards a green economy requires participation in new business partnerships with the skills and knowledge of Aboriginal and Torres Strait Islander people that will be more equitable and sustainable. It is seen as a significant part of closing the gap between Indigenous and non-Indigenous Australians and delivering improvements to Indigenous wellbeing. A wider Indigenous participation in a green economy however requires significant policy changes which range from respect and recognition to involvement and capacity enhancement (see Box 1).

| Indigenous participation in the green economy will require the following policy making changes |
| 1. **Recognition**: of the skills and knowledge developed by indigenous peoples in relation to components of the green economy (such as sustainable land management) and integration of that knowledge into strategic and operational management; |
| 2. **Involvement**: in advisory committees and joint management projects; |
| 3. **Respect and Accommodation**: of indigenous decision-making structures and governance arrangements within government decision-making processes; |
| 4. **Enhancement of the capacity**: of indigenous groups to participate in decision-making for the management of cultural heritage, land, resources and other components of the green economy; and |
| 5. **Enhancement of the capacity**: of government agencies, structures and representatives to facilitate input from indigenous communities and account for decisions based on that input. |

Box 1: Policy-making requirements to facilitate successful indigenous participation in land management utilising traditional knowledge and expertise (NSW GOV, 2008, p. 9).

CONCLUSION

This paper explored a number of the elements that contribute to Indigenous participation in Australia’s emerging low carbon economy: the geography of low carbon resources and their associated technologies, Indigenous knowledge that can facilitate and expand participation, and the economic and labour characteristics of clean energy projects. Despite some positive examples, the broad question posed whether and how Indigenous Australians would secure business opportunities and employment from the growth of a low carbon economy, will continue to require attention and concerted effort.
Inherent within this question is an understanding that the answer will, in part at least, be based on contemporary movements to overcome Australia’s racist history as well as require strategies to include Indigenous social and knowledge forms in education and training and in business development.

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V. Prospect Thinking in Action
THINKING OF THE METROPOLIS WITH A DIFFERENCE

Cultural space is not just a topographical metaphor. As Ewa Rewers stresses, it may be tantamount to embracing the fact that “public communication takes place in a framework that can be discussed but one that cannot be replaced by the discussion.”\(^1\) The researcher is mainly interested in art and architecture which shape communicative communities. However, if her insights are given a metaphysical twist, then the notion of cultural space being irreplaceable by discussion has a fundamental, and not just communicative, meaning. Space is referred to not only in topographical, physical or communicative terms but also, most importantly, in experiential terms, which leads one to perceive communities as not simply social but first and foremost as cultural. It is the cultural space that resonates with ethnos, the particularity of the place, its *genius loci*, intimate understanding of its natural surroundings, etc. Behind the cultural valence there is however still something more – a metaphysical community. The space is more meaningful than the word. The shift from one to the other makes it possible to ask the question what it means to characterize a given cultural space as particular, unique, or one that may contribute to living a good life.

The recognition of human and natural forces has to find its reflection in the landscape of cultural experience. I do not trust the communities that disregard the rhythms of cultural and natural territory, rendering its unique voice inaudible. Good spaces involve a separate and unique way of thinking that resonates within us and is manifested without when we are situated in a given place. It strikes others with difference and yet we too are appalled by its otherness. This kind of thinking is not only social but also metaphysical. Cultural identity does not rest on the social attributes of “us” and “them”, nor does it reside in the well-known ethnographical inventory of cuisine, custom and belief. It is the essential that we are only beginning to take root in: the recognition of space-time.

\(^1\) Ewa Rewers: *Miasto – twórczość. Wykłady krakowskie* [City – Artistic Work. Cracow Lectures], Kraków 2010, p. 32.
continuum, the distance from oneself and from the others, the attachment to fate and necessity, the silence one needs to keep, the focus on the accidental, the affirmation of either stability or changeability, the thinking in terms of the fragment, detail or whole, the receptivity to the infinite, the experience of living, the attachment to a certain geometrical order, etc.

Still, in order to trust the space in the real sense, so that it is not just a short-term social construction whose meaning is reducible to its social serviceability, one needs something more. Strong cultural spaces do not exhaust their meaning by demonstrating their particularity but they seek to make space for multiple influences, to accommodate a multitude of everyday practices and to create spheres of experimentation with the place and its tenacity. At the same time, they do not allow unification and the triumphant march of globalizing dullness. These are not spaces that are merely crossed by others or passed by. They do not impose the necessity of settlement, they do not make one stay within their bounds, but what they do require is the recognition of the distinct value of local places and practices of living. The strength of the place strikes us with its particularity and the easiness with which that particularity is manifested.

The metropolis can be first and foremost recognized by expansive thinking, and only secondly by mere administration processes that have a vast range because they encompass different areas of activity bound to nearby towns, or cities, or – most often – districts. The metropolis is a space of multi-focus architectonic experimentation that ventures to transcend the limits of the former space while retaining its original character. These tangible architectonic fireworks coexist with the fireworks in the educational, economic, liberal, moral, artistic, etc. sphere. Within the metropolis, open-mindedness replaces the sense of “primordial ties” that anthropologists have been so fond of talking about. The story of blood, ancestry, customs, religion and language loses its transparency, which does not mean that Geertz’s “identity package” has faded into oblivion. The metropolis is marked by a vast range of its instrumental thinking and action.

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2 Cf. projects based on space which have been carried out in metropolises: *The Contested Metropolis. Six Cities at the Beginning of the 21th Century*, ed. Raffaele Paloscia, Basel 2004.
The vast range of thinking is a culmination in the development of urban culture which is however more detectable in the network of correlations between cities, towns, settlements, villages, and all kinds of territories. Metropolises, as distinct points on the map of territorial thinking, circulate popular ideas, reinforcing them through repetition and encouraging the mutation of thoughts and cultural practices. This kind of “expansion” of fashion, cultural trends and patterns of behaviour is discussed by Roberto Salvadori.\(^5\) On the one hand, the metropolis radiates its influence on its surroundings; on the other hand, there is no metropolis without the reinforcing context that provides a corrective to metropolitan thinking. The context places constraints on the artificiality and excessive experimentation of the centre. What I am interested in here is the fact that the metropolis lives both separately and together with its others. And it is out of the right proportion between the two that the particularity of the place arises.

Undoubtedly, the metropolis can be described as a connection and collaboration between smaller organisms. It is still a potent metaphor for architects and city planners, who view the combination of natural elements and urban texture as a chance to animate the space. This is perhaps best exemplified by the ideas presented in The Pop-Up City blog, which strives to articulate the notions and strategies capable of shaping the city of the future. Thanks to the new technologies and the architecture that draws on nature, the city becomes quite literally a living being, as evidenced in the projects of Rachel Armstrong, who cooperates with architects and researchers to make use of the building materials that have living capacities and can stimulate the “growth” of architecture.\(^6\) Armstrong hopes to be able to build sustainable cities by connecting them back to nature – and so the limestone reef is supposed to rescue Venice from sinking and to instill environmental thinking in its inhabitants.

Nevertheless, the organic metaphor is not the most significant one to describe the anthropological dimension of a place. The metropolis is not an organism of the kind that is sustained by the eighteenth- or nineteenth-century belief in the being dependent on the collaboration of organs which combined to create the


whole of social life. The metropolis is not an organization. The metropolis lives, but if it were a living organism in the biological sense transplanted onto the social sphere, it would be difficult to notice this residual living. It would be still more difficult to bring together its rough and uncoordinated experiences which are not tangible enough and therefore escape objective observation. And even though the story of the city’s heart, tissue, bodily surface, arteries, lungs and so on is well situated in our public space, as is the reference to the adaptation to the environment, I would rather frame the metropolis at a distance from Herbert Spencer’s evolutionist perspective.\(^7\) I think the myth of the perfect cooperation of parts is what should be resisted and marginalized in our thinking.

I find it also difficult to comply with the notion of the metropolis as a system. The term itself is satisfying on the epistemic level only to theoreticians working on model images of thinking and action. I do not share Ludwig von Bertalanffy’s fascination with the potentialities of a general system theory,\(^8\) since it is difficult to believe in the “palpability” of its approach to the world. It is still harder to justify its generalizing manner of speculation. Whether the system has a biological, cybernetic or economic reference, it becomes all too easy as an intellectual practice capable of discovering the principles that govern complex holistic structures. This is due to the movement of thought which is as sweeping as it is totalizing and simplifying. The generality and unity of such thinking about nature, society or artificial structures makes me consider the metropolis in quite different terms. Despite the fact that the systems narrative had an impact on Talcott Parson’s or Niklas Luhmann’s respective theories, I prefer to situate the experience of the place away from social engineering. It has always been alien to me, as it has never been sufficient for a theory that struggles to preserve sensuality, to be a sort of theoretical “sensorium” so that the fragility of experience is still retained as a vital quality. The notion of a system is useless when one attempts to describe experience or point to locations where a human being is present, as it is of little use in tracing the “thickness” of a place. It is to be regretted that one has to say farewell to the systems theory as it is a tool which


both easy to apply in its procedures of verification or falsification, and spectacular in terms of effects, making the scientific narrative coherent and unequivocal.

The metropolis is not a simple machine marked by its teleological character and specialization of its units, although the machine-related vocabulary is still capable of producing new metaphors that respond to our need for innovation. It is not just the modernist poet’s appeal for constructing a singing city machine.\(^9\) It refers both to the seventeenth-century idea and to a modern formula that has several versions. The machine metaphor may relate to the network of consumption, market processes, local government in its functioning, globalization processes, social regulations, urban policies or an ideological machine. The problem is discussed by Kevin R. Cox in his 1999 book, which by referring to Harvey Molotch’s 1976 work attempts to re-examine the machinery of practical urban ideologies which unify the phenomena at the local level and marginalize the existent racial and ethnic divisions or other social differences. Cox also strives to frame the ideological machinery of local community, which is tied to some preconceptions that make us celebrate the locality of a social group in the “we feeling” formula, while contributing to the formation of a sense of collective identity at the local level.\(^10\) The focus on machinery can also yield a description of the city as a machine of entertainment, as Terry Nichols Clark does in his work, showing that the former ways of thinking about locality were too simple and that the question of finding someone’s position within the city is a question of what they are close to, meaning places of entertainment and consumption, or urban facilities.\(^11\) The city thus becomes the business machine of entertainment, tourism, consumption, residence, leadership and administration, which are all means to programme comfortable collective living.

The notion of the city as a machine may also concern the networked space which is able, through its mapping of local connections, to build urban relations.

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Finally, it can denote a political or financial machine behind the city. In any case, what is at stake here is an automatically reproduced and repeated procedure that sustains urban existence. So construed, the city turns out to be a manifestly technologized, informational and cybernetic monster. The contemporary ways of thinking about the city and the metropolis still cling on to aspects of machinery but more in the sense of a computer network, cyberspace, or a virtual city that combines electronic means of communication and formerly independent urban structure. And even though the characterization amounts to a spectacular image of the city, one that is conspicuous, surfacing in many artistic and communicative projects, it is not the electronic or the cybernetic that provides the main gravitation centres for the city and its meaning. Metropolises have many gravitation centres and many ways of thickening the space-time continuum (since the city is not reducible to mere space). The centres of real importance are however placed in the proximity of the local experience.

The metropolitan is about the politics of recognizing not just the unity but, first and foremost, the independence of its constituent solids, figures and points. It is out of the spirit of independence of that strange geometry that the metropolis arises. The metropolis is never a physical or spiritual monolith. To examine the metropolitan geometry of space is in fact to come up against a multitude of geometries. And even if the focus is on the nonlinearity or linearity of the metropolis, on its spacious or superficial character, on its attachment to certain solids or figures, what cannot be left out is the significance of the points in the space-time continuum which correspond to individual experiences of the inhabitants faced by the fate and cultural force of the territory. It is on them that the metropolis truly relies.

The metropolis is a continuation and reinforcement of urban settlement in its major sense that Richard Sennet was writing about – of providing the space for the encounters between strangers.\(^\text{12}\) The metropolitan dwells on the interpersonal distance and implies the trust in idiosyncrasy. It aims at loosening ties and basing social games on the rules of politeness and indifference. It does not mean, though, that it is a mere social product since strong metropolises do exhibit the power of a separate cultural territory. This kind of local distinctiveness

is what cannot and should not be disregarded.

The metropolis has to extend over some large space as its surface is its main force. It is a real and tangible power within territorial bounds. One cannot dismiss this territorial power from one’s interpretation since without the sense of being rooted or settled in and on the ground, without the expansiveness, there will not be any expansive thinking or nonchalance of action typical of the metropolis. To govern such a vast territory is to highlight the differences of its constituent areas and, most importantly, to blur the boundaries and to acknowledge the detail, the ornament, and the stigma of different and unfamiliar experience. The broadness of thinking elevates the position of the fragile points of experience and individual relationship with the metropolis. In short, the metropolis is what acknowledges and upgrades local routes.

The metropolis is a social project and even more – it is a cultural project that consists in learning how to deal with differences. At the gates of the postmodern metropolises, gates that have already become blurred, transparent, allowing migration into the city space, there is always a gathering of strangers. The tension detectable in the relationship between hosts and strangers is examined by Michael Alexander.¹³ One could draw the conclusion that the metropolis is a peculiar notion that relies on the presence of strangers both at its gates and inside. There is a necessary clash between the metropolitan policy of openness, also in liberal and aesthetic terms, and its practices of exclusion and assimilation. As Ewa Rewers rightly points out, the metropolis may aspire to become something more than just a cosmopolitan agglomerate – it may become “urban culture transcending constitutive differences.”¹⁴ It can however also work to make the differences inessential and supplant them by the ceremonial celebrating of irrelevant divergences in the public space. But I am interested in still another element of the metropolitan life – ethnicization of space that reinforces the differences of one’s own and those of newcomers. This corresponds to what Ewa Rewers calls the “re-ethnicization of European culture,” where “both newcomers and hosts withdraw into the familiar.”¹⁵ In the humanities it is perceived as

¹⁴ Ewa Rewers: Miasto – twórczość..., p. 29.
a threat in the context of the dominating myth of rootlessness that is cultivated by authors who fear the comeback of nation-states. The idea of a nation-state is associated with the suppression of autonomous communities and local dialects, a vision ominously sketched by Zygmunt Bauman.\textsuperscript{16} But it is a gross overstatement to link rootedness and ethnicization with the idea of a monolithic nation. One should not frame the problem by confronting it with the threat of the renaissance of nationalism. It is not so much about the nation as about locality. It translates into the hope for recovering the ethnic and, in this sense, genuine nature of the place, which can be a good, homely and communal space unless it becomes the territory of cultural dictatorship. It is much more advisable to trust the attachment to the cultural difference of a place than J. Nicholas Entrikin’s idea of cosmopolitanism, which is reducible to the educational project of transcending one’s own position in favour of something in fact little known and understood.\textsuperscript{17} Rewers has struggled with the question of what is conducive to the creation of a cosmopolitan place, whether it is hybridization and transgression, or mixing, or rather erasure of borders and introduction of transnational standards.\textsuperscript{18} This is a crucial problem. In my view, from the perspective of the place and locality, the desired opening of borders can only be brought about by a strong place, that is, a place with roots, one that has a distinct position on the map of surrounding local communities, yet one that is also hospitable, allowing the changing cultures of newcomers to be heard and seen. Otherness is highlighted by the local culture on condition that the culture of others actively engages in its being brought to light.

This is how I perceive the problem of locality and the metropolis. A local metropolis is a space which brings to light the locality of a community which is stronger than any headline-making social events or conspicuous civilizational changes. Locality is present in the experiences of individuals who realize their potential within a community and do it with a sense of being rooted in the place. Barcelona would be a perfect example of such a good local community brought

\textsuperscript{18} Ewa Rewers: \textit{Miasto – twórczość…}, p. 42.
to light by Catalonia. Without strong regionalism there would be no home because it is only at home that the metropolis is able to exhibit its rootedness. One should give up the notion of the chief significance of rootlessness and the social project of tolerance based on the hotch-potch of different views and ways of living. It is true that they come to light within the metropolis on account of the vastness of its thinking and openness of its hospitable space. They are nevertheless not primary. Home is built by means of the power of the territory and the passion of thinking about the local position of a human being, however bombastic it may sound. This local orientation of a human does not lead to the closing of local worlds, but it does bring about the common creation of the space of certainties, which involves not only the unquestioned pride in one’s identity, but also the imperative to extend it in all directions: towards the infinite, toward the other, the impossible, the incomprehensible and the strange. Locality is then what introduces the city to the neighbouring areas that contribute to its making. It would be an overstatement, though, to say that locality leads the city out of and away from itself. Being at home is never a lost chance. A local metropolis does not close the door on strangers, nor does it try to overcome difference: instead, it endeavours to reinforce it and demonstrate the strength of the place. It imposes on its inhabitants a sense of being subjects of the place that transcends them. To respect others is to accept the fact that whatever is mine is strong but the difference of strangers is equally strong and well founded. If we respect difference, we no longer debate about bland and wishy-washy ideas such as equality because a place is always defined, it is “mine.” And what is mine is unified by the imperative of hospitability, but also by the need to protect oneself and one’s own image of what constitutes a human being, community and territory. In this sense, locality of the metropolis would be an alternative to the notion of the metropolis as a big social shopping mall. To local territories difference is something essential that cannot be made irrelevant by the demands of political correctness.

I would be most glad to be able to share Rewers’s view that the immigrants are the “avant-garde and laboratory of the post-nation state.”

19 Ewa Rewers: Miasto – twórczość…, p. 46.
against strangers. But I do not think that they are a real driving force because the proper subject of culture is a place. It is what reverberates in thinking, in the receptivity to others, in the treatment of time, necessity and fate, and in the approach to nature. The newcomers complete the existing project of a place insofar as they become its subjects – in the good sense of subjection as service and humility, as conscious being in a place that means being adequately situated. It is utterly wrong when they question the rules of a community and threaten to erase the uniqueness of the place.

It is true that we are in need of a language of communal rights that would secure one’s membership of a community such as EU, but it need not be construed as a project aimed at erasing local difference. Whenever I think about the Habermasian notion of “European constitutional patriotism”, I know that for Europe it is a mere ethnographic invention – the idea of combining societies in the name of a broader community unified by its attachment to Enlightenment emancipation projects. Transnational social movements and the defense of human rights are a cultural advantage, a mere particular gesture that becomes both the object of desire for the others without and the reason for their aggression. Universalism of the European perspective is a local value that may be tempting to others while having pride of the place in the community. The most sensible attitude is to hold on to one’s space, which remains open to whatever comes but at the same time is able to guard its distinctiveness in terms of the repertoire of local values and mental habits. This is a guarantee of the particularity of the place, of the sense that where we live is not a mere construction of the discourses of administration and law.

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INTRODUCTION: PEACE EDUCATION AND COLLECTIVE MEMORIES

The idea and programs of Peace Education were formalized in San Francisco in 1945 at the conference aiming to establish the United Nations Organization. According to the adopted arrangements, shaping peace culture transgressing the boundaries of collective or individual particularisms and re-sentiments was declared as its basic objective. Peace Education has also been presented as a process of developing of knowledge, values, attitudes, and practical skills indispensable to life in harmony with the others. Following Noddings (2008) and Page (2008), acquiring these skills by people results from the reflection on the consequences of war, hatred and social injustice. However, as Bar-Tal (2007) argues, the experience of past conflicts and inter-group violence can be a significant barrier to building the peaceful coexistence of nations, races and ethnic groups. Especially, if it is being passed across generations influencing collective consciousness.

Different authors define this phenomenon with different terms. J.E. Young uses a phrase ‘a memory of the witnesses’ memory creating a vicarious past’ (2000). In N. Fresco’s works it appears as ‘absent memory’ (1984), H Raczymow on the other hand uses a notion of ‘memory shot through holes’ (1994). M. Hirsch (1997, 2008) calls it ‘post-memory’ and defines it as the “relation of the second generation to powerful, often traumatic, experiences that preceded their births but that were nevertheless transmitted to them so deeply as to seem to constitute memories in their own right” (Hirsch, 2008; 103).

The memory of collective oppression, activated in specific social, economic and political contexts may trigger the vicious circle of hatred and violence. Its dreadful effects can be found in the tragedies in Rwanda and former Yugoslavia. In
less dramatic forms - as flashbacks - it visits children and grandchildren of the victims of the Holocaust, WWII, slavery and racial segregation as well as the crimes of the communist system. Generalizing, ethnic minorities can be hostages to their history, and their inter-group dialogue can be hampered with the experiences of their ancestors.

As this memory is vicarious, it is activated in step with the demise of the actual victims of the traumatic experience. As that experience is not directly accessible to the members of the next generation it is reconstructed on the basis of fragmentary, usually, recollections by others, historic narratives, literature, art, photography or preserved objects (Kaniowska, 2008). Since the content of the transfer is engaging and causes emotional identification with the narrating group or individual the subjects incorporate that experience in their own cognitive structures attributing to it the rank of one of the control mechanism affecting perception, thinking and social behavior. Subsequent generations of memory carriers are defined as post-generations. In the Polish perspective, one of the most significant historic experiences creating post-memory and post-generation in 20th century is World War II associated with the memory of genocide accompanying the Nazi and Soviet occupations.

**POST-GENERATION OF WWII IN POLAND**

In 1939 Poland was facing two totalitarian regimes, Nazi Germany and Stalin’s Soviet Union, flanking it from East and West. The tragic fate of the Poles in the war period culminated in the experience of Warsaw inhabitants. Heavy bombardment and braking resistance to the Hitler forces entering Poland in 1939 resulted in serious damages in the city. German occupation authorities executed a policy of extermination towards the city and its inhabitants, as well as physical and psychological destruction alongside with obliteration of the Polish culture, mass terror and genocide. Daily roundups, tortures, street executions, extermination of the Polish elites and banishment to the concentration camps or slave labor in Germany were accompanied by hunger, typhoid fever, lack of medicine and medical assistance, degradation of education and destroying of the Polish culture. Particularly tragic was the fate of the Jewish Varsavians, who were denied the right to live and concentrated in the ghetto area (about 100 000 of them
died of hunger and disease, over 300,000 were gassed in Treblinka). Providing any assistance to Jews by Poles was punished with death to all the members of the family. The powerless of both the Jewish as well as the Polish side of the city was a tragic and overwhelming experience. In spite of that an intensive rescue operation developed for the victims of the Holocaust on the other side of the ghetto wall.

The culminating traumatic experience of WWII is associated with two city uprisings perceived as the icons of the Polish 20th century history: 1) Warsaw Ghetto Uprising (19 April - 16 May 1943), and 2) Warsaw Uprising (August 1 - October 3, 1944). The first one resulted in the Jewish district destruction, death of about 63,000 inhabitants of the Ghetto as well as a the powerful trauma of Polish witnesses. The other one is the Warsaw Uprising aiming at stopping the intensified extermination of the city and its liberation in the expectation of the arrival of the Soviet Army. Abandoned by the Western politicians and with the coming Red Army the Uprising fell. The human losses (about 27,000 soldiers and 180,000 civilians killed, 175,000 wounded, 600,000 exiled out of the city after its fall, 90,000 deported to Germany for forced labor and 60,000 sent to the concentration camps), as well as cultural and material damages (hundreds of cultural monuments and thousands of artifacts of high cultural value lost; over 50% buildings destroyed, overall losses amounted to $46 billion) still remain in the memory of Varsovians. The anniversary of the Warsaw Uprising’s outbreak is an annual patriotic manifestation of subsequent generations of Poles. Its particular significance is linked to the hostile attitude displayed towards it by the Communist authorities in the past.

Varsovians who survived, came back to Warsaw and avoided the persecution of the Stalinist terror apparatus, had to raise from the ruins not only of their city but also of their lives. Their will to regain normal life together with political repression dampened the attempts to articulate the experienced trauma, contributing to the culture of silence. Used to keep silent for the benefits of their families the up-risers however provided their relatives with testimony about the tragic past, hoping the memory of Warsaw’s tragedy to be preserved by their children and grandchildren.

Warsaw’s baby-boomers (the second generation survivors), were also subjected
to the intensive educational efforts of the communist system. The legitimization of the iron-curtain and hegemony of the Soviet Union required a clear image of the external enemies (such as Federal Republic of Germany and the German organizations of the Expelled). Exploiting the trauma of the WWII and manipulating the image of the Polish-German relations created the platform for the ‘post-traumatic culture’, where traumatic collective experience became a fetish organizing the masses and allowing for national identity reconstruction. In that culture the contents of formal education and official culture (curricula, textbooks, film, literature) emphasized the historic threat from the Germans, establishing a national mythology of eternal victims as well as channeling tensions resulting from the inefficiencies of the economic and political system. Finally, the partial coincidence of the official political propaganda and unofficial inter-generational transfers resulted the creation of strong post-memory of WWII in the young generation as well as contributed to the sense of hostility and distrust in the Western neighbors of Poland.

TOWARDS RECONCILIATION - TRAJECTORY OF THE CHANGES IN POLISH-GERMAN RELATIONS

The onset of the change in this case was the year 1966, when on the widely celebrated occasion of the millennium of Poland’s baptism a group of Polish bishops undertook an effort to launch historic reconciliation with the German nation. That move did not meet, at first, a positive response either by the regime or society at large, although this is not very clear considering the limited opportunities for gauging public opinion at that time. It went also against the official position of the Soviet bloc of exonerating East Germany (GDR) from the responsibility of the Nazi period, the whole brunt of the blame directed against the FRG, the revanchism of the expelled from the former German territories, now in Poland, and the fact that Germany was the frontier country of the North Atlantic Treaty Alliance. The visit of Willy Brandt, the Chancellor of the Federal Republic of Germany to Warsaw and his kneeling in front of the Warsaw Ghetto Uprising monument marked a changing point in the Polish-German relations. It took place on the same day, December 7, 1970, when Poland and the FRG signed a Treaty on the foundations of normalization of relations between
the two countries. This decision of Willy Brandt was a major reason for granting him the Nobel Peace Prize in 1971. The real changes in the Polish-German relations began with the post-1970 brutal repressions against the pro-democratic movement in the Gdansk shipyard.

The new regime of Edward Gierek established better relations with West Germany resulting in normalization of family reunification from the former German territories in Poland. However, there remained an obstacle in pushing the relations into a new dimension, namely the fact of recognizing the Polish post-WWII borders.

The pro-democratic changes in Poland and the emergence of the Solidarity movement and the subsequent introduction of the martial law by Gen. Jaruzelski had a catalytic effect on the Polish-German relations at the humane level, when Polish people met with a lot of assistance and support from the German population. The victory of the pro-democratic movement led by the Solidarity Trade Union and Lech Wałęsa opened the space for fundamental changes in the Polish-German relations.

On November 1989 Chancellor Helmut Kohl presented in Bundestag a 10 point plan of gradual overcoming of the division of Europe and Germany. On June 21, 1990 the parliaments of the GDR and the FRG in an identical declarations recognized the inviolability of the western border of Poland, while on June 17, 1991 Chancellor Kohl and the Polish Prime Minister J.K. Bielecki signed a treaty on good neighborhood and peaceful cooperation between Poland and Germany. At the same time three bilateral agreements were signed: about Youth Cooperation, on establishing of bilateral Council on Environment Protection and the Inter-government Commission on Regional and Border Cooperation. In 1993 there were established Polish - German Euro-regions on the Spree and Neisse-Bobr rivers and Pro Europa Viadrina Region, and in 1995, a Polish-German-Swedish Euro-Region - Pomerania.

On January 25, 1993, the Polish Minister of Defense, Janusz Onyszkiewicz signed in Bonn an agreement on military cooperation, which was the first of such kind signed with a post-Communist country. The trilateral military cooperation between Poland, Germany and Denmark resulted in establishing the Multinational North-Eastern Corps in Szczecin on September 18, 1999.
There were several steps taken to alleviate the mutual prejudices resulting from the common past. On October 16, 1991 an agreement on humanitarian assistance to the victims of the Nazi crimes in Poland was signed.

A true breakpoint in the mutual relations in the post German reunification period however was the Polish-German summit which took place in Bonn on July 14, 1997. It was the first such bilateral consultation at the highest state level Germany had concluded with any state of Central-Eastern Europe. On March 26 the Bundestag approved the protocols of the Polish accession to NATO, and on October 20 of the same year Helmut Kohl was decorated with the highest Polish distinction - the Order of the White Eagle. However, the issue of the Germans expelled from the former German territories became more pronounced after the adoption by the Bundestag on May 29, 1998 of the resolution on the ‘Expelled, Resettled and the German Minority as a bridge between Germany and its Eastern Neighbors’, which was met with the resolution of the Polish Sejm of July 3 of the same year on the harmful influence of the German resolution on the development of bilateral cooperation, as well as the resolution stressed the inviolability of the borders in Central and Eastern Europe. In the year 2000 both countries celebrated a millennium of the Polish-German neighborhood.

Despite this Poland’s public opinion was annoyed with the increasing importance of the debate about the construction of the Center against Expulsions in Berlin, as well as the Prussian Trust representing real-estate claims of the German citizens who lost their property during the WWII. The enlargement of the European Union on May 1, 2004 was celebrated in both countries and the President of Germany Rau was the only foreign speaker in the combined session of the two Houses of the Polish Sejm in the eve of the accession. On August 1, 2004 Chancellor Schroeder participated in the celebrations of the 60th anniversary of the Warsaw Uprising, and in his speech he assured that the German government will not support the WWII property claims of the German citizens. In 2009 Chancellor Angela Merkel participated in the celebrations of the 70th anniversary of the outbreak of the World War Two in Gdansk, where she unequivocally condemned the German atrocities that began with the invasion of Poland on September 1, 1939 and she was applauded for her statement about
the ‘eternal’ responsibility of Germany for the outbreak of WWII. Reciprocally Donald Tusk was present at the celebrations of the 20th anniversary of the Fall of the Berlin Wall. A recent event demonstrating the cordial working relations between Poland and Germany was the visit of President Bronislaw Komorowski commemorating the 20th anniversary of the treaty on good neighborhood and friendly cooperation between the two countries.

This very brief account, and quite superficial because of length limits, is a list of those official steps that led to reconciliation and to very good, some argue, the best relations between the two countries in recent history. However it seems imperative to mention a long lasting initiative called – Aktion Suehnezeichnen Friedendienste, i.e. Action of the Repentance Sign/Service for Peace, which was initiated by the representatives of the German Protestant Church as a response to the failure of the Evangelical Church in Germany to the challenge of Nazism. In 1958 at the Council of the Evangelical Church of Germany, a call to the “Action of the Repentance Sign” to rouse the indifferent part of the German society to the atrocities and harm caused by the Nazis to other nations. Although the existence of two German states at that time did not allow for concentrated German action, two organizations were established in the East and West Germany. Despite that the official doctrine of the German Democratic Republic, as mentioned before, did not share the blame for the Nazi past, East German youth participated in a limited fashion in the activities of the ASF. In 1965 and 1966 the groups of the Repentance Action visited the former concentration camps in Auschwitz, Majdanek, Stutthof, Gross-Rosen and Wroclaw. In the next years the GDR government did not allow its citizen to participate in those activities. Only the lifting of the visa requirements between Poland and GDR in 1972 made it possible for informal summer camps with the participation of young people from East Germany. In FRG there developed a long-term voluntary movement, whose participants worked for several months on various projects - first connected with the reconstruction of the war damages, but since the sixties of the last century, for the social institutions and peace projects. The volunteers look after Holocaust victims, people impaired physically and mentally, as well as in places of commemoration of the victims of the National Socialism. In 1986 they have commissioned to Oświęcim an International House for Youth Meeting, erected as an initiative of the Repentance Action (ASF). The unification of
Germany in 1991 allowed for the unification of the two organizations since then functioning under the name Repentance Sign Action/ Service for Peace.

The changes in the official Polish-German relations initiated at the end of the 1960-ties did not meet with an understanding at first. The WWII survivors showed a lot of distrust towards them. The post-memory generation, contesting communism, cultivated the iconic image of Warsaw as the Polish Masada. A thaw took place gradually - and paradoxically - another great youth generation contestation, i.e. the hippie movement contributed to it significantly. The generational mechanism and communist internationalism established the sense of affiliation and ties with the youth of the other countries, and it opened areas of contact, although not numerous, but psychologically important, between the Polish and German youth (first and foremost in the GDR, the communist East Germany). A community of revolt and the attractive youth subculture of Hippies and flower-children (the values promoted, music, clothing and life style) stimulated the emergence of the overriding category WE: “we, young generation of the world” uniting over the historic and ideological differences.

At the same time the limitation of the political repression in the early 1970 in Poland resulted in cultural and economic revival, increasing contacts with abroad and young generation’s concentration on improving fast its living conditions. The decision made in 1971 to reconstruct the informal symbol of the Polish independence, i.e. the Warsaw Castle, destroyed by the Germans and maintained as a ruin by the Communist authorities until the end of the Sixties constituted a sign of closure in the chapter of the Polish-German history. Pacifist movements, development of humanist psychology oriented at ‘hic et nunc’, and the dominant value of peace for the then young generation were not without significance as well as the willingness to reject historic re-sentiments in order to construct a culture of global solidarity reoriented the generation of post-memory to contemporary times.

Also the 80-ties provided an opportunity for overcoming the painful past, since the post-memory generation created its own ethos of Solidarity, and then experienced its own trauma of the martial law. That period is characterized with great benevolence and help extended by the inhabitants of the Federal Republic of Germany supporting the Poles in their bloodless revolution. The memory of
that assistance, overlapping the earlier experiences of direct contact with young Ger-
mans, provided a counterweight to the memory of WWII. Particularly big merit in limiting the scope of the post-traumatic culture however was the share of the Warsaw survivors themselves.

The dilemma they faced was contained in the question: ‘How to preserve the memory of the past without transferring the historic antagonisms onto the next generation?’ Desiring a better and safer life for their children, the majority of them decided to take another heroic step, which came to an effort to encapsulate their own trauma as a closed historic experience and thus releasing the post-war German generations from the odium of collective responsibility. Such an approach, which coincided with the processes of Polish transformation in the social-economic and political realms as well as entering the structures of NATO and the European Union with the intensification of the Polish participation in global processes resulted in the shift of the Warsaw Masada from everyday value to a holiday status.

A value shift, however, does not mean rejection. The traumatic post-memory remains and it may be revived, becoming an integrating factor for larger social groups as well as a focal point for crystallizing collective identities. Its inherent ability to gather people of similar historic heritage allows for social mobilization and community polarization according to attitudes towards the past. The catalytic properties of the post-memory are the reason why it can be appropriated, manipulated and exploited by organizations and politicians wanting to build social capital on historic re-sentiments, revanchist tendencies and the culture of collective trauma.

The particular sensitivity of the post-memory generations results in the fact that historic re-sentiments find their revival in contexts not necessarily recalling the WWII period, but allowing for confrontation with the groups that had been in conflict in the past. Football games played by Polish and German national teams provide a classic case of that kind. The power of the confrontation of the sports type don’t last for a long time however, and the negative emotions generated by it quickly dissipate.

More destructive effects may be the result of ill-thought political actions, which show lack of historic sensitivity. A trigger point in the contemporary Polish-
German relations for such a conflict was provided by the activities of Erika Steinbach and the Union of the Expelled demanding financial and moral compensation for the losses the Germans suffered in the Polish territory as well as the debate on establishing a German Center against Expulsion, presenting the experiences of the Germans displaced from Polish to German territories by the powers of the Potsdam declaration (1945). A flashback experience appeared also during the celebrations of the Polish Independence Day in 2011, when armed groups of German anarchists attacked a reconstruction group in historic military uniforms in Warsaw and the pageant carrying national flags. Those events, however incidental, have renewed the social memory of the past trauma. They have also contributed to the revitalization of the post-memory in the consciousness of the third generation seeking its identity inter alia through attempts to embed more definitely in the ancestors’ history.

CONCLUSIONS

In conclusion it must be said that instilling the ability of peaceful coexistence is one of the major tasks of education in the contemporary world. Implementing that task depends, though, on the ability of nations to deal with the post-memory of traumatic events in their history. The coping process includes four crucial issues: 1) understanding the banality of evil, universality and dynamics of inter-group conflicts, violence and genocide, and its political, economic, social and psychological background (Arendt, 1994; Zimbardo, 2007), 2) building of the emotional distance to the Past by developing the heterophatic type of post-memory (identification with a victim at a distance) rather than the idiophatic one (over-appropriate identification, lack of emotional distance, direct access to the historical trauma followed by the "appetite for alterity") (Silverman, 1996), 3) developing the feeling of justice by breaking with the tribe loyalty, group conformity and rivalry, building the empathy towards victims of a conflict independently to their group affiliations as well as rejecting the category of collective responsibility across-generations, and 4) developing dialogue between post-generations.

The case of the Warsaw inhabitants shows that intergenerational transfer of the experience of national tragedy may shape the way several generation think and
function, thus becoming the center of crystallizing the collective identity. It is possible however to reconstruct it in such a way that preserves the memory of traumatic past yet with weakening its influence on the present. The basic condition for such reorientation must be in recognition of the harm and lost, providing justice to the victims and their suffering (including those of the oppressor’s camp) as well as resignation from the use of the collective responsibility category, parting with the culture of collective trauma and enrichment of the centers shaping collective identities (cultural transfer, education) with contents oriented at development and future. It also should aim at development of overriding categories allowing for emotional identification with meta-ethnic categorizations (e.g. WE - the youth, or WE - the participants of trans-national programs), as well as opening various spaces allowing the carriers of post-memory personal contact, dialog and cooperation with the country perceived as a historic oppressor and its culture and inhabitants. Considering the power of impact of the unforgivable wrongs, undoubtedly a symbolic act of collective forgiveness and reconciliation would be desirable. It would have the power of the rite of passage from a painful past to a safer future. As the case of Eva Kor forgiving Dr. Mengele exemplifies, though, such an attitude may be perceived by the inhabitants and inheritors of the trauma culture as excessively radical.

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Introduction

The purpose of this investigation is to characterize the impact of the Five Waves of Globalization (world-wide reaching flows of goods, money, information, people and so forth in a scope and intensity dependent on the time in history), which are taking place in the last 500 years upon the world civilization (a complex similarly interactive entity of society, culture and infrastructure in a large frame of territory and time, usually embracing several nations and centuries/millennia). As a result of these waves, a Global Civilization is emerging in the 21st century. Its religion, society and infrastructure as well as associated repercussions will be defined. It is a very rare case for one to observe the rise of a new civilization during one’s life. However, this is the case with the Global Civilization which is replacing Western Civilization during our generation’s time.

The Impact of Globalization Waves Upon Civilization

The 500 years of the intensive and consistent process of globalization of the world provide the following conclusions:
1. Globalization waves were triggered by the global minded elite which was/is able to control global economic strategy and political policy.
2. In the last 67 years (1947-2014) humans have been facing four different globalizations;
   a. Pax Americana and Pax Sovietica being both ideologically confrontational and globally minded,
   b. Pax Consortia and Pax Virtualiziana being both economically-politically confrontational and globally and humanity minded,
c. Some generations even have been experiencing all these four globalizations with a lot of challenges and all kinds of problems.

3. The last 500 years of ICT development transformed the global elite from colonial to information minded, which should be promising from a human-kind point of view, particularly in any ideological confrontations in the global society (Financial Elite) and global virtual society (Merit Elite).

All globalization waves are compared and assessed in Table 1.

Table 1. Comparison between globalizations in the last 500 years

<table>
<thead>
<tr>
<th>WAVES</th>
<th>GUIDING DIMENSION</th>
<th>EXECUTABLE DIMENSION</th>
<th>TECHNOLOGICAL DIMENSION</th>
<th>SOCIETAL DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Pax Portugannia 1500-1837</td>
<td>Henry the Navigator</td>
<td>Portuguese Empire Based on the Best Ships and Needs for Spices and Luxury Goods</td>
<td>School of Navigation (Information technology)</td>
<td>Christian Society</td>
</tr>
<tr>
<td>II-Pax Britannica 1837-1914</td>
<td>British Royalty &amp; Government</td>
<td>British Empire Based on the Best Ships and Needs for Raw Materials and Markets for Industrial Goods</td>
<td>Telegraph, Telephone, Steamships</td>
<td>Colonial Society</td>
</tr>
<tr>
<td>IV-Pax Consortia 1989-2000+++</td>
<td>Stateless Consortia Financiers, CEOs</td>
<td>G8 and Party of Devos Off-shore Outsourcing</td>
<td>The Internet, Long-distance Airlines and Ships</td>
<td>Upper and Low Classes Society</td>
</tr>
<tr>
<td>V-Pax Virtualiziana 2000+++</td>
<td>New Information Elite</td>
<td>Global Virtual Nation and Government</td>
<td>The Internet</td>
<td>Global and National Virtual Societies</td>
</tr>
</tbody>
</table>

Table 2 lists some negatives and benefits resulting from the globalization waves.
Table 2. Comparison of the impacts of globalizations in the last 500 years

<table>
<thead>
<tr>
<th>WAVES</th>
<th>LASTING TIME in years</th>
<th>SOCIETAL DIMENSION</th>
<th>BENEFITS</th>
<th>NEGATIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Pax Portuganna 1500-1837</td>
<td>337</td>
<td>Christian Society</td>
<td>Expanding the World</td>
<td>Slavery</td>
</tr>
<tr>
<td>II-Pax Britannica 1837-1914</td>
<td>77</td>
<td>Colonial Society</td>
<td>Expanding the World Trade and Technology</td>
<td>Wealth Development at the Cost of Others</td>
</tr>
<tr>
<td>III-Pax Americana 1947-1989</td>
<td>42</td>
<td>Middleclass Society</td>
<td>Democracy and Capitalism Promotion</td>
<td>Too Many Political Conflicts and Wars</td>
</tr>
<tr>
<td>IV-Pax Consortia 1989-2000+++</td>
<td>11</td>
<td>Upper and Low Classes Society</td>
<td>Flattening of the World</td>
<td>Middleclass Decline</td>
</tr>
<tr>
<td>V-Pax Virtualiziana 2000+++</td>
<td>5</td>
<td>Global and National Virtual Societies</td>
<td>Better Informed New World Elite</td>
<td>Unpredictable Outcomes</td>
</tr>
</tbody>
</table>

Figure 1 illustrates the 500 years long process of developing the five Globalization Waves which resulted in the formation of two new horizontal civilizations: global and virtual.

Figure 1. The 500 years long process of transforming the world by five Globalization Waves, resulted in the formation of Global and Virtual Civilizations at the dawn of the 21st century.
ENABLING FACTORS OF THE GLOBAL CIVILIZATION

Technological Advances in Transportation and Communications Technologies

These technologies provide the infrastructure for globalized operations. Tables 3 illustrates the decreasing costs of transportation in the last 160 years (1830-1990) and Tables 3 and 4 show how the costs of communication and computers declined in the last 40 years (1960-2000). During the first and second waves of globalization, technology provided incredible productivity in making and moving things. In the third wave, technology is driving the productivity of information itself.

Table 3. Transport costs, 1830-1990

<table>
<thead>
<tr>
<th>Year</th>
<th>Ocean Transport Wheat, Percent of Production Cost</th>
<th>Ocean Freight 1920 = 100</th>
<th>Average Air Transportation Revenue per Passenger Mile (in 1990 US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1830</td>
<td>79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1850</td>
<td>76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1880</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1910</td>
<td>27.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>65</td>
<td></td>
<td>0.68</td>
</tr>
<tr>
<td>1940</td>
<td>67</td>
<td></td>
<td>0.46</td>
</tr>
<tr>
<td>1950</td>
<td>38</td>
<td></td>
<td>0.30</td>
</tr>
<tr>
<td>1960</td>
<td>28</td>
<td></td>
<td>0.24</td>
</tr>
<tr>
<td>1970</td>
<td>29</td>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td>1980</td>
<td>25</td>
<td></td>
<td>0.10</td>
</tr>
<tr>
<td>1990</td>
<td>30</td>
<td></td>
<td>0.11</td>
</tr>
</tbody>
</table>

Sources: Baldwin and Martin (1999), World Economic Outlook, May 1997, Table 11.

Table 4. Communication and computer costs, 1960-2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>60.42</td>
<td>1,869,004</td>
</tr>
<tr>
<td>1970</td>
<td>41.61</td>
<td>199,983</td>
</tr>
<tr>
<td>1980</td>
<td>6.32</td>
<td>27,938</td>
</tr>
<tr>
<td>1990</td>
<td>4.37</td>
<td>7,275</td>
</tr>
<tr>
<td>2000</td>
<td>0.40</td>
<td>1,000</td>
</tr>
</tbody>
</table>

**Info-communication Technology (ICT)** triggers a shift in the postindustrial society’s *modus operandi*, which is based on new key features (Bell 1981):

1. shift from a goods-producing to a service economy,
2. increasing reliance on theoretical knowledge, and
3. creation of a new “intellectual technology” based on computers and other smart machines.

Manuel Castells (1996) observes that “what has changed is not the kind of activities humankind is engaged in, but its technological ability to use as a direct productive force what distinguishes our species as a biological oddity: its superior capacity to process symbols.” The ICT technology does not replace agriculture and industry but optimizes them. It leads towards the informatization of the Global Society, which by connecting all of us makes us the Global Open Society (Anderson 2004). Like the symbiosis of humans and machines the emerging Global Digital Consciousness (GDC) provides cognition and external memory systems that support the Global Civilization and vice versa. Hence, the GDC is composed of:

- **infosphere** (computerized info-communication systems composed of databases, applications, and networks)
- **cyberspace** (the Internet and Web applications)
- **mediasphere** (radio, TV, cable)
- **mindsphere** (global ideas generated by the previous global spheres)
- **cybersociety** (using e-communication and presence).

The Globalization Index, which breaks down globalization into its most important component parts indicates that the “most wired” countries in the world are beneficiaries of globalization. The Globalization Index tracks the movements of money in terms of investments and business transactions in the era of “electronic capitalism” (Bledsoe 2001).

**Manufacturing Outsourcing from Western to Oriental Civilization**

In the 1980s, the developed countries began to outsource manufacturing to countries with cheap labor. As a result, poor countries broke into the global markets of manufacturing goods and services, whose export of manufactured
goods and services rose from 25 percent of total export in 1980 to more than 80 percent by 1998. The most successful countries in this field are Brazil, China, Hungary, India, and Mexico, together with 20 other countries. With 3 billion people, they achieved a level of growth 5 percent higher than developed countries. The rest of the developing world is trading less at the beginning of the 21st century than it did in 1980, which means that 2 billion people are marginalized, with some countries showing even negative growth. In more successful, developing countries, the poverty level started to decrease. The total number of poor people in rural China alone was reduced from 250 to 34 million from 1980 to 1999 (Stern et al 2002).

**Lowering Tax Barriers**

Reduction in average tariffs is the highest in South Asia, from 65 percent in the early 1980s to about 30 percent in 2002. In the same period, Latin America, East Asia and the Pacific lowered tariffs from 30 percent to 15 percent, Europe and Central Asia from 15 percent to 10 percent, the most industrialized economies from 8 percent to 5 percent. Only Sub-Saharan Africa, the Middle East and North Africa lowered tariffs by small percentages, maintaining them at roughly the 20 to 25 percent levels that existed in 1998 (World Bank 2001). Countries like Ethiopia and Uganda liberalized trade significantly. The average tariffs in rich countries are low, nevertheless they maintain barriers in exactly the areas where developing countries have comparative advantage: agriculture and labor-intensive manufacturing. The cost of protection by rich countries and paid by poor countries is at the level of 100 billion US$ per year, which is twice the size of aid from the Northern to the Southern hemisphere (Stern et all 2002).

**Power of the Global Financial Elite**

The last few decades, since the 1970s and particularly since the 1980s, have seen the rapid financialization of the U.S. economy and of global capitalism in general, as the system’s center of gravity shifted from production to finance. Over decades, the result has been the massive growth of a financial system in which a debt squeeze-out never quite occurs, leading to bigger financial crises and more aggressive state interventions.
As financialization proceeded, more and more exotic forms of financial innovation (all kinds of futures, options, derivatives, swaps) arose, along with the growth of a whole shadow banking system, off the balance sheets of the banks. The repeal of Glass-Steagall in 1999, although not a major historical event in itself, symbolized the full extent of the deregulation that had largely taken place by then. The system had become increasingly complex, opaque, and ungovernable. A whole new era of financial conglomerates arose, along with the onset of the Great Financial Crisis in 2008 (Foster and Holleman 2010).

The data from the Forbes 400 show that speculator capitalists have become increasingly dominant in the U.S ruling class, displacing industrial and petroleum capitalists…. Moreover, the speculative basis of U.S. and global capitalism brings greater risk of instability.

The dominance of the financial elite over the U.S. state and the Global Economy is exercised through representatives, or various power elites, drawn directly from the capitalist class itself and from its hangers-on, who come to occupy strategic positions in corporate and government circles. The concept of “the power elite” was introduced in the 1950s by the sociologist C. Wright Mills, and was subsequently developed by others, including G. William Domhoff, author of Who Rules America? For Domhoff, the power elite is “the leadership group or operating arm of the ruling class. It is made up of active, working members of the ruling class and high-level employees in institutions controlled by members of the ruling class.”

**Power of Global Corporations**

In 1952, General Motors CEO Charles Wilson made the famous statement that "What is good for General Motors is good for the country." During the past decade and a half, General Motors and other global corporations have obtained much of what they claimed was good for them. They have succeeded in obtaining trade and investment liberalization policies that provide global firms considerable new freedoms to pursue profits internationally. They have also persuaded governments to take a generally hands-off approach to corporate monopolies, claiming that mega-mergers are needed for firms to compete in global markets.
Of the 100 largest economies in the world, 51 are corporations; only 49 are countries (based on a comparison of corporate sales and country GDPs) (Institute for Policy Studies 2010). To put this in perspective, Royal Dutch Shell was in 2012 bigger than Argentina; Wal-Mart was bigger than Austria; Toyota was bigger than Pakistan; IBM was bigger than Slovakia; and Apple was bigger than Morocco.

Global corporations exercise their power by strong election campaign contributions and lobbying. The exact amount spent on these activities is not known, but of the Top 200 firms, 94 maintain "government relations" offices located on or within a few blocks of the lobbying capital of the world Washington, DC's K Street Corridor.

Tax avoidance is another symptom of the power of global corporations. While company-specific data on tax avoidance inside and outside the United States does not exist, the trend towards lower corporate tax burdens is also evident internationally. According to the OECD, over the past two decades the share of total taxes made up by corporate income tax in the industrialized OECD countries has remained about 8 percent, despite strong increases in corporate profits. The organization attributes this decline in tax rates to the use of "tax havens" and intense competition among industrialized countries as they attempt to lure investment by offering lower taxes.

**WHY GLOBAL CIVILIZATION?**

The fourth wave of globalization leads towards the emergence of a Global Civilization because this civilization meets the general criteria of civilization (Targowski 2004). For example:

- **Global religion** - since the Western Civilization has been transformed into Global Civilization at the dawn of the 21st century, Christianity (Protestantism and Catholicism) has been replaced by a global religion, which is reflected in beliefs that business is the omnipotent power which should control society for its benefit. Because what is good for business is good for society.
- **Human entity as the Global Society** is composed of certain segments of the
societies of 8 autonomous civilization (Western, Eastern, Islamic, Japanese, Chinese, Buddhist, Hindu, and African), which apply global culture and infrastructures;

- Culture has a global character, which means that particular and same patterns of behavior are practiced (de facto by certain segments of those societies only) in those autonomous civilizations, e.g. English, professional dress code, music, movies, food, drinks, and so forth;

- Global Infrastructure: of Information (1) (the Internet and Global Area Networks), of Material (2) (transportation, finance, and business) reaching every autonomous civilization and integrating them into an emerging Global Society and Global Economy. Furthermore, there are many international organizations (for-profit and non-profit, official and unofficial) as UN, UNESCO, GATT, WTO, WB, IMF, NATO, and others, which create the Global Infrastructure of Regulations.

However, the Global Civilization is not another autonomous civilization, which can be called vertical. In fact, it horizontally penetrates autonomous civilizations as shown in Figure 2. Some critics may say that the reach of the Global Civilization in the least developed autonomous civilizations is yet very modest (for example, a small number of users of the Internet or telephones). On the other hand this reach is observable and known in those civilizations, whose elites are rather active users of the Global Civilization.

![Figure 2. The emerging Global Civilization as a new layer of the World Civilization at the dawn of the 21st century](image_url)
GLOBAL CIVILIZATION IN THE PROCESS OF GLOBALIZING OTHER CONTEMPORARY CIVILIZATIONS – A COMPARATIVE APPROACH

Figure 2 intuitively exemplifies the perceived degree of globalization taking place in eight contemporary civilizations in the 2010s. The most globalized is the Western Civilization, which has already almost transformed into the Global Civilization. It happened, because the Western Civilization is the key trigger of globalization as an opening for more growth of its saturated economy.

The Japanese Civilization is far advanced in the process of transformation into a Global Civilization, since Japan accepted in the 19th century strategy of modernization a la westernization. The Meiji Restoration also known as Renovation, Revolution, Reform or Renewal, was a chain of events that restored imperial rule to Japan in 1868 under the Meiji Emperor. The period spanned from 1868 to 1912 and was responsible for the emergence of Japan as a modernized nation in the early twentieth century. After World War II Japan has democratized its political system and Americanized its economy, even becoming the leader of advanced manufacturing goods in electronics and cars today.

The Eastern Civilization (Russia, Ukraine, Belarus, Moldavia, Armenia, Georgia, Romania, Bulgaria, Serbia (not Greece, which is Orthodox but as an exception belongs to the Western Civilization) is modernizing and globalizing today depending on any given state’s policy. However, due to political obstacles countries such as Russia and Belarus try to restore the Russian Empire led by strong nationalism, based on the common enemy, which is wrongly (but purposely) perceived - the political West or Global Civilization. Countries such as Georgia, Moldavia, and Serbia are in the process of associating with the European Union, which is far advanced in the transformation into a Global Civilization. Romania and Bulgaria are already members of the European Union and fast westernizing/globalizing. Only Ukraine is at the cross-roads between the Eastern and Western Civilization. In the Autumn of 2013 Ukraine’s President Viktor Yanukovich refused to sign the association agreement with the European Union, since he chose the agreement with Russia, which provided $15 billion loan for Ukraine at a specially lowered price for gas and oil on December 19 (RIA Novosti-12.19.2013). Ever since, Ukrainian citizens are exposed to everyday clashes in Kiev between pro-EU demonstrators and riot police follow-
ing the President Viktor Yanukovich’s rejection of a free trade deal with Brussels after intense political and commercial pressure from Moscow. If Ukraine stays with Russia this will deepen its nationalistic attitude against the West, however, at the same time it will be globalizing a la “Russian Mother.”

The Chinese Civilization is the largest beneficent of globalization since as a result from this process, it became the World’s Factory. Its young generation is westernizing quickly but the political authority does not want to modernize a la westernization. There are doubts whether this civilization would transform fully into a Global Civilization in the foreseeable future.

The Hindu Civilization is modernizing a la westernization and globalizing to become the World IT Laboratory. English is one of two official languages of this civilization, which tremendously helps in benefiting from globalization. On the other hand, due to remarkable social and economic inequality in this Civilization, it is doubtful whether it is able to ever transform into a Global Civilization.

The Islamic Civilization is “oiling” the process of globalization and profiting from it. On the other hand it is refusing to modernize and Westernize with the exception to its elite. Even with the promising Arab Spring of the 2010s it went backward instead of forward as shown in a country like Egypt. Other countries like the United Arab Emirates beat all world records in building the most modern cities (such as Dubai) and Qatar with its super modern city Doha benefit from global tourism and finance. Nevertheless their social system is deeply far away from the Western Civilization’s policies.

The Buddhist Civilization is strongly religion-driven, despite the fact that it is rather a secular religion than divine. It has such intellectually wise dogmas that many Westerners switch to Buddhism. It is very unlikely that Buddhist values would ever be replaced by the values of global business.

The African Civilization has its elite educated in the Western/Global Civilization but due to colonialism in past centuries it is also the victim of Westernization as contemporary globalization, which is in fact Colonization 2.0. Nowadays, Africa has become a battle ground between Christianity and Islam, being in the mean time taken by the Chinese businesses and their values-driven by Buddhism. Therefore, today Africa is tempted by globalization but not able yet
or ever to transform into the Global Civilization.

Table 5 compares contemporary civilizations and their ability to globalize and transform into a Global Civilization.

Table 5. Comparative Status of Contemporary Civilizations in Terms of Their Ability to Become Global Civilization in the 21st Century

<table>
<thead>
<tr>
<th>CIVILIZATION</th>
<th>Globalization Impact</th>
<th>Key Factor</th>
<th>Status of Global Civilization</th>
<th>REPERCUSSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>It triggers Globalization</td>
<td>Global financier</td>
<td>Global Civilization Dominates Western Civilization</td>
<td>Economic Decline and Possible Correction</td>
</tr>
<tr>
<td>Japanese</td>
<td>It triggers Globalization</td>
<td>Global Corporations</td>
<td>Global Civilization is Second Layer over Japanese Civilization</td>
<td>Economic Stagnation and Possible Correction</td>
</tr>
<tr>
<td>Eastern</td>
<td>Depending on Country</td>
<td>Business and/or De-Sovietization</td>
<td>Rather Globalization than Global Civilization ever</td>
<td>Status Quo</td>
</tr>
<tr>
<td>Chinese</td>
<td>It triggers Globalization</td>
<td>Business</td>
<td>Rather Globalization than Global Civilization ever</td>
<td>Controlled Globalization</td>
</tr>
<tr>
<td>Hindu</td>
<td>Strong</td>
<td>Business</td>
<td>Rather Globalization than Global Civilization ever</td>
<td>Spontaneous Globalization</td>
</tr>
<tr>
<td>Islamic</td>
<td>Weak</td>
<td>Oil Export</td>
<td>Globalizing Elite</td>
<td>Arrested Globalization</td>
</tr>
<tr>
<td>Buddhist</td>
<td>Very Weak</td>
<td>Tourism</td>
<td>Globalizing services for visitors</td>
<td>Anti-globalization policies</td>
</tr>
<tr>
<td>African</td>
<td>Confused</td>
<td>Natural Resources</td>
<td>Globalized as by-product of Global Business’ Activities</td>
<td>Confused policies</td>
</tr>
</tbody>
</table>

As shown in Table 5, the Global Civilization became like Western Civilization 2.0. It is accepted by the Japanese and Hindu Civilizations. However, the latter will never transform into the Global Civilization due to their deep coherent cultures, even very close culture as in the Japanese Civilization. What is the future of the Global Civilization? Is it limited to Western Civilization 2.0? Or due to profound social negative changes (diminishing middle class and technological assault on the labor force) in it, would it turn into reverse gear in the near future?
Or is it really good for the World Civilization to break with diversity and move to one and only kind of a civilization? The near future should provide some more substantiated answers to these questions.

GLOBAL CIVILIZATION IN THE 21ST CENTURY

At the end of 2nd Millennium, two civilizations; Western-West and Japanese were at a level of saturation, which pushed them to external expansion, leading to the creation of the Global Economy. From the end of World War II until 1973, the United States experienced sustained economic growth. However at the beginning of the 21st century, the U.S. with a saturated national economy is looking for assuring sustainable growth by exercising competitive advantage through lowering costs with the help of outsourcing strategies around the globe.

Outsourcing provides growth for the American national economy without the creation of new jobs. This process is copied by other states of the Western-West Civilization. Of course, the reaction from the victims of globalization is strong and loud. It looks like the workers of the Western-West Civilization are not satisfied by the rise of the Global Civilization, but stateless consortia and some developing countries are.

Almost every product or service market in the major economies of the World Civilization has foreign competitors. Increased foreign competition is in itself a reason for a business to globalize – in order to gain the size and skills to compete more effectively (Yip 1995). The global competitors are mainly Americans, Europeans, Japanese and Chinese.

The Global Economy is only possible, because it is supported by Global Infrastructures, allowing; global communication (the Internet, Global Area Networks); global transportation, global finance activities, global scientific knowledge (principles, rules, and laws defined in a given science/technology) creation and dissemination, global management practices, even global peace keeping (with less success). The architecture of the Global Civilization is shown in Figure 3. The Global Civilization is controlled by an invisible power, composed of global financiers and banks, stateless corporations, outsourcing CEOs, G7, IMF, WB, WTO and global religion, culture and infrastructure.
The Global Civilization can be defined as follows:

*The Global Civilization is a large Global Society living in integrative horizontally whole or partial spaces in the contemporary, autonomous civilizations as a fuzzy reification (invisible-visible) which is not part of a larger one and exists over an extended period of time. It specializes in inexpensive labor and differentiates from other civilizations by developing its own advanced global cultural system driven by electronic communication, global business religion (super-consumerism, wealth and power-driven), and sharing the same knowledge (principles, rules, laws defined in a given science/technology)/wisdom (good judgment and choice) system within complex urban, agricultural infrastructures, and others such as industrial and information ones. It also progresses through a cycle of stages such as rising, growing, declining and falling. At the dawn of the 21st century it is at the rising stage of this cycle.*
CONCLUSION

1. At the dawn of the 21st century, the IVth Wave of Globalization is transforming the Western Civilization into a Global Civilization, since Christianity was replaced by a Global Religion (under the form of business religion), Global Information and Transportation Infrastructures became a very popular solution for globally communicating ideas and decisions as well as moving materials, goods, and people. Eventually the Global Society became a visible, strong entity developing Global Culture as distinctive similar patterns of behavior practiced around the world.
   a. This transformation is reflected quite visibly in the rising huge financial inequality among globally specialized business people and workers (without college degrees) in the Western Society who are structurally unemployed and have a little chance to be re-employed unless they obtain a good professional degree. In the U.S. out of 155 million participants in its labor force, about 120 million are at risk in sustaining their American Dream. Furthermore their plight supposedly is their fault.
   b. There is a visible attitude in the media and politics that what is good for business should be good for the Society. However, it used to be reverse premise of business.
   c. At the level of the average people, particularly in Western Europe, there are dramatical declines in the number of Christians going to church and instead are affected by super-consumerism with all related values provided by business.
   d. The opposite view says that business is not an overwhelming power that it can be controlled by the democratic process of politics. However, practice shows that business through its lobbyists is against any regulations planned by the politicians and required by the electorate.

2. The Global Civilization is of integrative and horizontal character, which penetrates autonomous civilizations either entirely (like the Western Civilization) or partially (like the Japanese, Chinese, Eastern or Hindu Civilizations).
   a. So far at the beginning of the 21st century, the Western Civilization has been almost entirely transformed into the Global Civilization, which is
the upper layer above the lower layer of the diminishing, traditional Western Civilization.

b. Civilizations like Japanese and Hindu are modernizing through Westernization, becoming Globalized or Westernized 2.0., but their lower layer is still of their strong traditional civilization character.

c. Civilizations like Chinese (financed through being the World Factory-largest outsourcer) and Eastern (financed through oil export) are modernizing very impressively refusing to being Westernized but are globalized through intensive trade development reaching all corners of the world. Their traditional civilizations act as the second layer of their civilization.

d. The opposite view is that globalization and the Global Civilization is the long awaited way of making the diversified human race One Family with One Government. However this view neglects the golden rule of diversity of nature including people, which if neglected would lead to a totalitarian ineffective, corrupted world government.

3. The Global Civilization, particularly the steadily developing globalization at this time is not stoppable, since it is driven mostly by the very strong desire to increase the wealth of the Global Elite and improve the economic condition of undeveloped and developing nations. Since it means also the free flow of ideas and people (to a certain degree) it is welcomed by the Global Merit, composed of media, intellectuals, and some politicians who control the global mindset of people.

a. There are no signs of slowing down the process of globalization by policies of the politicians at power in all contemporary civilizations.

b. The anti-globalization movements are too weak to threaten the Global Elite which controls governments, military, and media.

c. However in a long-term the Global Civilization is not sustainable as it consumes strategic resources (oil, gas, uranium and color metals) in an accelerated manner. Eventually the human race won’t be at the level as we know it today.

d. The opposite view emphasizes humans’ ability to develop more effective knowledge and technology which should solve almost every social problem faced today. The belief in technology instead in the wisdom of
people cannot solve the problems of overpopulation and planet degradation.

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VI.

Varia: Political Transformations
EVALUATION OF ECONOMIC AND POLITICAL TRANSFORMATION AND THE STRATEGIC DILEMMA OF GEORGIA, 1990-2010

ECONOMIC AND POLITICAL TRANSFORMATION IN GEORGIA

Starting in 1990, the sharp downturn of the economy in Georgia lasted for about 5 years, which was due to domestic political controversies and the military aggression of Russia. In 1990-1993, the GDP rate decreased by an average annual 28%\(^1\). By 1995 production was reduced by 78% compared to 1990, which is almost 3 times higher than the fall in production level in USA during the Great Depression. As for Georgia’s foreign policy, it was determined by Russia, i.e. forced upon with its aggressive course and left no other choice to Georgia than to strongly align with the West and undertake a USA oriented foreign policy course. However, despite Russia’s aggression, there have been and still are proponents of the Russian course, which creates a divergent transformation syndrome in politics, which creates a divergent transformation syndrome in the economy and both form a divergent transformation syndrome in the thinking of the country’s society, leading to a collapse in the nation’s unity.

Among the countries in the post-Soviet space, Georgia was the last to start building a peaceful statehood and transformation of its economy since 1995. Thus was of a divergent nature from the very beginning with one of the main reasons being the fact that in Georgia, the former Soviet Union and then Russian intelligence officers worked actively on creating this syndrome.

Since 1995 the Georgian economy is partially coming out of the crisis, which is facilitated by institutional transformations. The year 1997 was the peak of economic growth and the rate of GDP was 10.7%, which is the highest value before the Rose Revolution. Then the growth rate fell sharply and the financial crisis of Russia in

1998 significantly slowed economic development – its influence on Georgia was high, because the economic links between Russia and Georgia were still strong. In 1996 the GDP of Georgia was GEL3,868.5 mln (USD3,064.6 mln), in 1999 – GEL 5,668.7 (USD 2,814.1) and in 2003 – GEL 8,564.1 mln (USD 3,990.8)\(^2\).

In fact, the newly-formed state failed to ensure efficiency in the state finances and collect taxes. The share of the state budget in GDP was insignificant. In 1995 it was 5% of GDP, although it increased in later periods, it did not exceed 12%. Until 2004 it was one of the lowest indicators in the whole post-Soviet space. Hence, the state had weak financial, economic and institutional capabilities for performing any transformation in the economic and social spheres.

In 1994-1998 a number of reforms were performed towards stabilization and liberalization of the economy. Accordingly, changes were carried out in the banking system, a national currency – GEL was introduced, the privatization of small and medium enterprises started, liberalization of trade was performed. This was a reform of economic stabilization and structural changes, whose aim was to stop hyperinflation, balance the economy of the country and create institutional conditions for forming a market economy. After these reforms national income increased quickly, which along with the reforms implemented in the country, was conditioned by the construction of Baku-Supsa in 1996-1998 and Baku-Ceyhan in 2003-2005. Nevertheless, the level of development of Georgia appeared insufficient to resolve its social problems and according to World Bank data, the number of people whose daily income was less than USD 1.25 increased from 5.3% to 6.0% during 1997-2001, this indicator further increased to 7.0% in 2013, and despite a twofold increase in GDP, the distribution of welfare factor decreased.

During the 1990-1994 sharp economic fall, according to official data unemployment was 14-16\(^3\). The level of unemployment in cities where 52.3% of population lives exceeded that in villages approximately 4 times. Furthermore, the largest part of the unemployed were people with higher education. According to expert data in unemployment was 10-12% in 2014. In 1994 poverty reached the maximum level of 82% and then it gradually decreased to 50% in 2014.

In 1998-1999 with the background of the global currency crisis, the rate of economic growth of the country was again reduced and Georgia’s development was

\(^2\) National Statistics Office of Georgia. www.geostat.ge

slow until 2004. Though, while the Georgian economy in 1994 was 18.7% of its 1990 level, in 2003 it was approximately 73%. Georgia appeared not to be resistant towards foreign shocks and did not manage to avoid the influence of the currency crises of its neighboring countries Russia and Turkey in 1998 and 2000. This can be assigned to inconsistent macroeconomic policy, partial structural reforms and non-transparent financial system, which contributed to the strengthening of corruption (in the corruption perception report produced by Transparency International in 1999, Georgia held 84th place out of 99 countries).

The hyperinflation of 1990-1995 in Georgia was at an average of 3310.6%, as a result of which quality of life reduced everywhere, distribution of income became socially unequal, and unemployment reached its highest point. Hyperinflation in Georgia was almost 3 times the average rate of inflation in the post-Soviet countries. It significantly reduced in subsequent periods, but it was still very high for a stable development. In 1996-2000 inflation was 14.6% and still hindered growth in wellbeing, in 2014 it reached 11%. In 1996-2000 price liberalization in the country increased the deficiency of payments in its trade balance due to lack of competitive goods. This tendency continues until nowadays although at a low pace.

In 2001-2004 the government had mainly passive social policy, limited to unemployed and poor people. It including meager monetary aid and was aimed at compensation for working ability and loss of income in cases, such as illness, unemployment, old age, and childbirth. Due to the total poverty and deficiency of the state finances, this system was inefficient and expensive.

In 2004-2007 the average annual rate of GDP increased to 9.3%. Furthermore, the highest double-digit growth of 12.3% was recorded in 2007.

At a sectoral level, the share of agriculture in GDP has been decreasing year by year in the 1990s and it was 33% of GDP in 1996 and by 2010 this share decreased to 7.3%. During 2003-2010 the areas of one-culture crops halved, including: the areas of wheat planting reduced by 60%, corn, potato and vegetables -50%, gourds and animal feed crops by 80%, potato crops almost halved, corn reduced by 70%, vegetables and grouts -60%, wheat and fodder crops - 80%, fruit and grapes harvest halved. Compared to 2003, in 2010 the number of sheep and goats decreased by 10%, cattle -16%, pigs - 77%, poultry - 30%, 48% less meat and 23% less milk was produced. Productivity is not growing in the agrarian sector, and in the case of

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4 National Statistics Office of Georgia. www.geostat.ge
some cultures, significant decline in crops is observed. In 2013, these negative trends are noted again in agriculture despite the fact that the leader of the political union Georgian Dream Bidzina Ivanishvili invested significant amount in its revival. The cause is divergent transformation\(^5\).

The share of industry in GDP declined from 11% in 1996 to 8% in 2003 due to power shortage and lack of investment, but as a result from privatization, carried out after 2003. Its share reached 15.2% in 2010.

Trade occupies an important place in the Georgian economy. Its share in GDP steadily increased, which was a common phenomenon for countries in a transition period. With reduction in other areas of industry and economy, trade became one of the most important spheres of employment. This tendency, formed in the 1990s still continues today.

Trade was growing particularly rapidly during 2003-2010 (7.9 times), while at the same time, GDP increased 1.65 times. It should be noted, that if in 2000-2004 output in trade was slightly behind the rate of increase of total output in the economy, the situation changed after 2004.

In 2009 the output of trade (cars and fuel) compared to previous years reduced by 26%, and GDP by 16.3%, due to the events of 2008, but in 2010 the increase of output reached 28.1%, and GDP increased by 14.1%. This growth trajectory is more or less maintained until now.

Considering the political and economic transformation of the Caucasian region, a transformation in Georgia’s domestic political views occurred, which extended within the society the views of different parties resulting in a divergent transformation syndrome with regional aspects.

The analysis shows that out of 208 parties, registered in Georgia, only 11 have an election program which takes into account aspects of the Caucasian regional policy, and in reality only 20 parties exist. Domestic political issues are revealed in the programs, objectives, as well as the means of achieving them, though the situation is worse in regard to foreign policy goals in relation to both EU and Russia.

The Labour Party, National Movement, NDP (The National Democratic Party), National Forum, the Free Democrats, New Rights and Christian-Democrats state integration with Western European organizations as well as regulation of

\(^5\) National Statistics Office of Georgia. www.geostat.ge
the relations with Russia as the main foreign objective priority in their programs, but with the difference that the Labour Party is skeptical about Georgia joining NATO. According to them were Georgia to join any military block this would bring more harm than benefit. In regards to the National Party, its main priority is close cooperation with the United States and putting Georgia on European “rails”, with the ultimate goal of integration in the European Union and NATO, despite the fact that forward steps are obvious (realization of set goals), the ultimate goal was not achieved yet – that is why it is being criticized by other parties. According to them, the National Party does not have a straightforward plan to achieve the goal, however, neither does the coalition – the Georgian Dream does not have a straightforward plan either and this is due to the fact, that it represents a conglomerate of political parties with different ideologies, which creates a domestic divergent transformation syndrome. It is clear, that Georgian political parties are swirling around a vicious circle, and despite the rhetoric about integration of Georgia in the European Union and the building of a democratic state, the politicians and decision-makers do not offer to voters programs representing the major element of the liberal-democratic state that they are trying to build and this is caused by the existence of the divergent transformation syndrome. Despite the current controversy, a joint development program to mobilize the following goals could be formed:

1. Strengthening relations with the United States. There is a long-term partnership experience with this country, its invaluable assistance - especially in terms of military infrastructure and capacity development, in the context of financial assistance, rendered the strengthening of democratic values and standards for the purpose of socio-economic development and Georgian membership in the Euro-Atlantic area - USA is considered to be the primary strategic partner of Georgia.

2. Strengthening relations with Ukraine. Similar democratic values, common commitment to the Euro-Atlantic space, as well as identical post-Soviet experience and its subsequent development are the basis for further development of friendly and partnership relations between Georgia and Ukraine.

3. Strategic partnership with Turkey is very important. Turkey was one of the countries, which since the day of restoration of its independence helped Georgia to become an infrastructural, tenable and successful country. Turkey supported Georgia in becoming a member of regional organizations and
the issues of integration in Black Sea partnerships. Th Turkey is one of the most important members of the North Atlantic Treaty and good relations with it are strategically beneficial, but the fact that Turkey appropriated Georgian territories in previous centuries and has an illegitimate claim over the Georgian region Adjara, should also be taken into consideration.

4. Neighborly relations with Armenia and Azerbaijan - another important and strategic issue related to establishing a peaceful Caucasus region and in the direction of reduction of the regional divergent transformation syndrome. A number of researchers consider Georgia as a possible mediator country in the issue of normalization and resolution of the Nagorno-Karabakh problem. In addition to neighborly relations the partnership Georgia-Azerbaijan-Turkey is of great importance in terms of security of energy corridors.

5. Neighborly relations with the Russian Federation – there is a number of difficulties here. The formation of this relationship should not take place at the expense of affecting Georgia's sovereignty and territorial integrity. The relationship with Russia is important for the country to achieve peaceful development and economic progress. Russia needs Georgia to gain dominance in the Black Sea, but it is trying to achieve it by way of aggressive policy, which indicates its political blindness.

6. Strengthening of partnership in the regional organizations of the Black Sea (namely GUAM, the Black Sea Economic Cooperation Organization, the Black Sea Naval Cooperation Group) and engagement in the ongoing processes, establishment of its own role on the way of achievement of organizational success are very important for Georgia.

**FACTORS, HINDERING ECONOMIC AND POLITICAL TRANSFORMATION IN GEORGIA – DIVERGENT TRANSFORMATION**

In the conditions of divergent transformation the social interests are categorized and determined according to separate individuals and groups. From these circumstances, categorization also takes place on the basis of the interests of individual famous persons. One of the main factors hindering the divergent syndrome is the nation’s sense of security, which can be interpreted as: norms of
thoughtful ideas, assumptions and behaviors, proceeding from adopted traditions of the nation, which create the need for the sense of collective security. This factor is deeply connected with the historic memory of the country and is conditioned by a lot of circumstances experienced by the country and one might say that it is the strategic thinking of the country, which serves its efforts to achieve the best for its own security. In the process of divergent transformation the security strategy of the nation can be understood as: “the science and art of applying political, social, psychological, and biological potential, in accordance with state policy, as a result of which conditions for prevention of the divergent transformation syndrome are created”. Formal strategic documents play an important role in preventing divergent transformation; additionally they perform a controlling role and are the main basis for implementation of mechanisms to ensure national security. Research has shown that these documents have a hierarchical nature and in the process of action at each level a chain link between them is established - “the logics of the document at each level is defined – to be the manual for subordinate and subordinated to the senior”.

In the process of transformation formation, the national security strategy is largely dependent on the political will, which also stipulates the country's political and economic security and balances the transformational process between different groups of society to create a unified security system. However, the security system carries constant dynamics and volatility, so it should be constantly evaluated and re-evaluated: whether a new basis of divergent transformation is being formed; how national security objectives correspond to national interests; how effective the components and tools of state power are. Also, if there are gaps, the strategy of the country is not balanced, which creates a two-vector strategic dilemma of high difference.

**The strategic dilemma of Georgia**

There are two geopolitical strategic vector choices before Georgia, namely:
1. A foreign policy course of Georgia oriented towards Euro-Atlantic integration;
2. A political course, strictly inclined to rapprochement with Russia with a possibility of further integration into the Eurasian Union.
The basis for choosing a direction is ensuring security, i.e. the protection of national values, which to some extent, is determined in the National Security Concept of Georgia and defines Georgian values:

- Sovereignty and territorial integrity;
- Freedom;
- Democracy and the rule of law;
- Security;
- Well-being;
- Peace.

Territorial integrity is the key value, which is a benchmark for all the efforts of the country and does not create a syndrome of divergent transformation - therefore the interests can be concentrated around one goal and the Georgian government is unable to use it.

The concept also deals with Georgia’s national interests, in which aspirations for European and Euro-Atlantic integration are evident and whose number of supporters grows with the growth of Russian aggression. However the divergent transformation syndrome does not disappear as unresolved issues remain, namely: Is support for Georgia by Europe one of the means to irritate or put pressure on Russia? How correlated are the interests of the western countries with Georgia’s main values, such as restoration of its territorial integrity? These questions have not been answered yet which creates the state's syndrome of divergent transformation.

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