



New consciousness: A societal and energetic vision for rebalancing humankind within the limits of planet Earth



Christian Breyer^{a,*}, Sirkka Heinonen^b, Juho Ruotsalainen^b

^a Lappeenranta University of Technology, Skinnarilankatu 34, 53850 Lappeenranta, Finland

^b Finland Futures Research Centre, University of Turku, Korkeavuorenkatu 25 A 2, 00550 Helsinki, Finland

ARTICLE INFO

Article history:

Received 30 October 2015

Received in revised form 16 June 2016

Accepted 27 June 2016

Available online 20 July 2016

Keywords:

Sustainability

Global Brain

Identity

100% renewable energy

Shift to power

Peer-to-peer

ABSTRACT

Humankind has reached a level of ongoing crises, which is mainly due to an unsustainable energy system and the non-acceptance of planetary boundaries. On a more fundamental level the crisis is caused by the prevailing worldview and values. Universally accepted values of today emphasize material wellbeing and growth, consider nature only as resources to be exploited by humans, and neglect the notion that humans are connected to each other and to nature on a very fundamental basis. Currently, 140% of the resource and absorption capacity of planet earth is required for human activities and the trend is against rebalancing. The dire consequence will be a collapse of the hosting capacity of our planet, as a simple matter of fundamental environmental facts.

This article draws a world which is mentally and ethically aware of the fundamental limits and the requirement to live in harmony with planet Earth. This describes an evolutionary development of humans and can be called a 'New Consciousness' scenario, akin to the concept of the Global Brain. Growth in this kind of a world is called neogrowth: it is environmentally sustainable and emphasizes social, immaterial and "spiritual" growth. Such an environmentally, economically and socially sustainable society is sketched and on that basis a very first estimate is given on the requirements and consequence for a fully sustainable energy supply which needs to be initiated now and fully realised in the second half of the 21st century.

The technologies required are already available and their respective economics are no obstacle. It remains unclear and from today's perspective even improbable whether humankind is able to go for that evolutionary transition in the future. However, nearly all other options might end in a collapse scenario in the dimension of geological history.

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1. Introduction

Further development of human welfare is at crossroads. WWF (2014) annually reports that for several decades humankind has needed the capacity of more than one planet Earth, based on the fundamental findings of Wackernagel et al. (1999, 2002). About 50% is due to resource exploitation and emissions of the energy system. There are limits to growth on our planet (Meadows et al., 1972), but humankind does not seem to keep within planetary boundaries as defined by Rockström and Klumm (2012) to show a "safe operating space for humanity". Diminishing energy fuels (EWG, 2013) have caused in the past and will cause in the future dramatic economic, social, political and military shocks. Poverty in the world needs to be tackled not only for humanistic reasons but also for rebalancing the births and deaths annually in order to stabilize the world population and keeping global warming within the 2 °C target on the mid- to long-term (Rogelj et al., 2013). Kaya and Yokobori (1998) concluded that the world population

is the key driver for global resource demand of humankind, confirmed by Raupach et al. (2007). The experience of the last decades has shown that growing standards of living reduce population growth most effectively (UN, 2013). However, this goes hand in hand with a fast increase in energy demand (Breyer, 2012). Kapitza (2006, 172) points out that energy is the most significant factor in growth, since it is the main resource for development, determining besides industry food production, transport, housing and communications. Like the population, energy production is additive and readily quantifiable.

There is a sense of urgency to tackle the wicked problem of growing unsustainability and breaking the planetary boundaries. Based on the interlinkages of climate change, energy resources and economic growth Dunlop (2011) argues for an immediate need for global risk management. Kanninen (2013) claims the world needs a survival agenda. Futures research should focus its major efforts on addressing it. From the framework of 15 Global Challenges by the Millennium Project, five challenges are directly dealing with this issue (sustainable development and climate change, energy, science and technology, clean water, population and resources) and the rest 10 challenges are indirectly concerned as well (Glenn et al., 2015).

* Corresponding author.

E-mail address: christian.breyer@lut.fi (C. Breyer).

To simultaneously supply for increasing energy demand and mitigate CO₂ emissions a new energy system is needed. In the Neo-Carbon Energy system, being studied and developed in the Neo-Carbon Energy project,¹ energy is produced mainly by wind energy and solar photovoltaics, used directly whenever possible, and stored in synthetic methane, other synthetic hydrocarbons or batteries. Carbon dioxide and hydrogen can also be used as feedstock for chemicals and materials.

The effects of the new energy system would not be restricted to energy production only, but would have consequences for the whole society. This is mainly owing to two reasons. First, the development of societies in history has always required a significant increase in energy production and consumption. Increase in the energy input of society correlates with a higher level of organisation and complexity in social structure – which is in general terms called “development”. (Last, 2015.) Second, contrary to non-renewable energy production, a renewable energy system would probably be more local and distributed. The Neo-Carbon energy system has the potential of providing the energy building block for a distributed society, in which economic production, and thus lifestyles as well, would be more distributed and local than today.

To set the Neo-Carbon energy system in societal context, four transformational scenarios have been constructed for 2050 (Heinonen et al., 2015). All of the scenarios share as predetermined factors the following: energy is provided mainly by solar photovoltaic and wind energy converters, ecological values prevail, and the society is organised around peer-to-peer networks. The scenarios are: 1) Radical Startups, 2) Value-Driven Techemoths, 3) Green DIY Engineers, and 4) New Consciousness.

This article concentrates on the fourth scenario, “New Consciousness”, which is the most transformational of the four scenarios. It is the hypothesis of this article that this scenario represents the future information society, in which ubiquitous ICTs have ushered towards a Global Brain (Heylighen, 2013), and an ecological consciousness is achieved. Schwartz (1998, 209) stresses the importance of scenarios in perceiving the holistic “bigger picture” – interconnectedness of e.g. international economic relationships, our ecological footprints and the globe-spanning technologies, notably ICTs. The concept of Global Brain refers to a planetary system of collective intelligence and self-organising coordination enabled by the use of ICTs – it is a decision-making system to solve global challenges (Heylighen, 2013; Last, 2014). As a holistic concept, the “Global Brain” would have consequences for not only decision making but also for culture, identities and human consciousness. Thus the article develops the Global Brain as a cultural and sociopsychological concept besides technological, political and economic one.

In the New Consciousness scenario the threat of an ecological collapse and ubiquitous information and communication technologies have led altogether to a new kind of consciousness – a sociopsychological “Global Brain”. Humans do not conceive themselves only as separate individuals, but also as deeply connected with each other and with nature. An individual’s identity is increasingly defined by shared values and shared consciousness. Values of deep ecology prevail, as “de-individualised” people see themselves as part of nature and do not seek self-interest as much as they used to but act in a more altruistic way.

Consciousness is often defined as all modalities of sensory perception, memory, thinking, and emotionality (Niedermeyer, 1994). Identity, in turn, is seen as a further component of consciousness (ibid.), and as divided into self-identity and social identity. Self-identity refers to the psychological features that distinguish a person from others, make him or her unique. Social identity, in turn, refers to those features a person shares with others. Shared values and cultural meanings are vital parts

of both self- and social identity – they create a social reality, which makes living existentially meaningful (Berger and Luckmann, 1966). In this article and in the New Consciousness scenario we understand consciousness in broad and general terms: as referring to identity and shared values and meanings. In other words, we see consciousness as a socio-cultural rather than a psychological concept. When society – its technologies, economy, politics etc. – changes, so does people’s consciousness. However, the psychological conception of consciousness is important to point out, because a cultural consciousness is rooted in the cognitive processes of a human mind. Cognitive-symbolic processes are vital for social learning and key components of (socially constructed) individuality; a person’s cognitive activities interact with the changing conditions of his or her life (Mischel, 1981).

In the scenario, “shared consciousness” has two layers. On the first layer, people identify with various communities, physical, virtual, and often both. Communities are not coercive: individuals belong to many different communities and are free to choose their entry and exit. The second layer is global: although societies are divided into different communities to a much larger degree than today, people have developed a global consciousness and identity as well. Thus the system can be described as both differentiation and integration. A wholly global identity may be a contradictory in terms, because identity is always relational. A person’s identity is defined by how he or she is similar to and different from others, and the same applies to groups and their identities (Fraser, 2000). In the scenario, differentiation takes place through communities, in which people construct their identities. Global information networks, interconnectedness and interdependence in terms of economics, politics, and culture, and shared awareness of the global ecosphere, in turn, have integrated individuals and communities so that they perceive themselves as parts of the global humankind and have forged a cosmopolitan identity (cf. Pichler, 2011).

The shift in consciousness has been facilitated by three factors in particular. First, as people are constantly connected to the internet through mobile and wearable devices, thoughts, ideas and information are being shared in a continuous flow. This undermines the notion of the “self” as the source of identity and emphasizes social identity. Second, due to the rise of the service and creative economy, collaboration and sharing have become prerequisites for economic value creation. This too has eroded the role of separate, individual actors and highlighted open communication and collaboration. Third, the looming ecological crisis has forced nations and citizens to question the sustainability of individualism as unrestrained freedom to pursue one’s interests.

In the world of New Consciousness, humans have loosened their individual egos and the individualistic worldview. Furthermore, they have become more environmentally conscious than ever since the industrial revolution. People see themselves as a part of nature instead of conceiving nature through human-nature dichotomy. The concepts of “growth” and “progress” have also been redefined. Since the industrial revolution of the 18th century, growth and progress have been understood as increasing material well-being and the emancipation of individuals. In the New Consciousness scenario, these are partly taken for granted, and partly seen as the root causes of the environmental disaster. Something new is thus needed in their stead. Malaska (2011) calls this kind of new, “post-modern” concept of growth “neo-growth” (see chapter 3).

The “New Consciousness” scenario uses highly sophisticated information and communication technologies – as the platform through which humans connect, communicate and merge with each other – in a complex, networked, and global social structure. Most of material production is automated, leading to material abundance. Drexler (2013) claims that using nanotechnologies and atomically precise manufacturing (APM), material abundance is possible to reach in a way that is low cost and environmentally sustainable. All of this requires a marked increase in the energy input of societies. As the scenario world is highly environmentally conscious, the energy system must be carbon neutral and sustainable in all dimensions.

¹ Neo-Carbon Energy is a joint research project of Lappeenranta University of Technology (LUT), Technical Research Centre of Finland (VTT) and Finland Futures Research Centre (FFRC), University of Turku.

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