Geopolitics of Cyberspace:
Virtual Power and International Development

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Abstract

Virtual global environment unites and interconnects individuals of the global international community all over the world. The cyberspace extends across national boundaries and enables political, economic and social structures exist in a virtual form. Online virtual spaces enable cooperation among integral parts of international communities and create international virtual environment as the universal platform for global communication, cooperation and development. The certain type of virtuality construction adopted to the prevailing technical equipment in each geographical region, with promoted common systems of shared meanings and social commonalities has not been considered the means of internationally uniting social power all over the world. In this connection, virtual power that may be presented as the gaming virtuality mode may serve the part of geopolitics of cyberspace and counterpart of global international development. The article proposes the concept of virtual power in terms of geopolitics of cyberspace and part of international development, promoted via virtual environments. To attain this objective, the paper focuses the concepts of cyberspace and cyber cartography. This is followed by representation of modified Wallerstein`s theoretical perspective as the alternative vision of the world-system structure. The article finishes with consideration on virtual power concept as the means of geopolitics of cyberspace strategy and the appropriate platform for the international unification and future development.

Keywords: geopolitics of cyberspace; virtual power; international relations; virtual environment; international development

1 Introduction

The international community is currently involved in a new digital information era. The worldwide digital economy is fundamentally relied on the diverse cryptographic processes, virtuality phenomenon gains on the popularity(Chang, 2017; North & North, 2016; Lau & Lee, 2015; Nardi, 2015; Bombari, 2015). International political, economic and socio-cultural structures exist in a virtual mode (Baylis, 2011) and are socially constructed (Wendt, 1999; Katzenstein, 1996). Development mechanisms of the international system are based on hybridity (Acharya, 2017). The dissemination of representational systems of social meanings and cultural valuesvia popular mass media resources may serve the form ofinternational cooperation (Constantinou, 2018).Advanced technological equipment that projects virtual reality spaces within global international environment is widely distributed. International markets, information infrastructures inter-unite individuals on the global international stage.

Visual representations serve the means of shaping individuals` interestsin the global internationalcommunities with an emphasis on the type of technical equipment that is capable to produce virtual reality expanse in a certain area and region(Constantinou, 2018). Artificial worlds presented in simulated virtual realm also affect digital marketing strategies (Zanni& Rios, 2018; Lin &Rauschnabel, 2015) in a global social context andconsolidate representatives of the international cyber society into discrete interest groups. Popular online mass media platforms are persistently growing in prominence among youngpeople (Goodyear, Armour& Wood, 2018; Swist, et al., 2015). Such platforms become a feasible mediator among interest groups in the global international level(Leavey, 2013; Margetts, 2009).

In this connection, it makes sense to argue, that global cyberspace and online virtual platforms serve theappropriate environment forinternational communication and cooperation. Such environment creates the appropriate platform for international cooperation and future developmentof the international system from a global perspective, as the distribution of consolidating social content may influence and shape actors` interests and integrate them and their strategies of behavior. By means of promoting consolidating social contentsadpted to thetechnological landscape incertain geographical areas may integrate individual actors on the international stage and diverse social groups. However, the promotion of certain type of virtuality content with emphasized commonalities of shared systems of meanings via global cyberspace adopted to the technical environment in a local area has not been considered the constituent part of the global internationaldevelopment according to the geopolitics of cyberspace strategyyet.

The paper focuses the global virtual environment an appropriateinternational platform for geopolitics of cyberspace implementation via adopting the virtuality with its content and representation of intersubjectivity as the discrete form of internationally unitingsocial power and platform for global communication. To achieve the objective, the paper focuses on the concepts of cyberspace and cybercartography. This is followed by the proposition of transformed Wallerstein`s theory as the contemporary structure of the world-system. This is followed by consideration of a virtual poweras the means of geopolitics of cyberspace strategy, with a particular attention on developing gaming industry.

2. Cyberspace as global virtual environment

The globally spread networking systems have influenced the essential processes of humanity existence on micro and macro levels. They synchronize basic human life processes across geographical boundaries, time zones and cultural prejudices. Social relations have already been hybridized into offline and online environments (Serrano-Puche, 2016). Global cyberspace integrates people all over the world into one common cyberspace community that is comprised of information infrastructures. Interest communities are internationally interconnected within online spaces and virtual platforms.

The structure of contemporary international systemis constructed by social ideas (Baylis, 2011).The concept may be interpreted as digital libertarianism as important characteristic of postmodern society.Many individuals spend a significant part of their conscious day in virtual reality spaces. Naím (2005) argues that essential communicative transactions today proceed among individuals in the global networking virtual space, so that an individual is considered an actor on the international stage. The Actor-Network theory focuses the exploratory consideration of social relations and various interaction modalities in global networking world. The Actor-Network theory has become increasingly prominent within the international relations discipline and political sciences (Lezaun, 2017; Bencherki, 2017). In this connection, the global cyberspace serves a strategic platform for social integration and communication on the international stage.

The definition of cyberspace initially refers to a multichannel widespread, interconnected digital technology system that creates a notional global environment in which communication over computer networks occurs. Subsequently, the virtual environment in which communication over computer networks is implemented can be understood as concept of cyberspace. Cyberspace can also be defined as avirtual environment in which communication over computer networks occurs. The cyberspace term also refers to a virtualized computer world and electronic medium (Kneale, 1999). Cyberspace is created by a global computer networking system and serves the facilitation of interaction and transaction processes.The term is currently used by technology strategists, industrial security representatives, in formal speeches and entrepreneurs to describe the domain of the global technology environment.

The term cyberspace is related to the notion of cybernetics. The notion is traditionally understood as the science of the general laws of information change within complex systems. Wiener has defined cybernetics as the science of communication, based on human-computed interaction studies (Wiener, 1948). Cybernetic studies in this connection are associated with general laws of networking processes that occur within complex dynamic transformation systems of social nature (Wiener, 1948).A number of contemporary cyberpschycological studies are devoted to the exploration of computer-mediated communication (Parker, 2007; Huber, 2006; Muhlberger, et al., 2005; Galimberti&Belloni, 2003). Cybernetics and networking information infrastructures generate global virtual cyberspace that is considered theglobal virtual field of action.

Currently, the international system is partially constructed and influenced by the spread of global virtual cyberspace. It makes sense to argue that in such type of a system data visualization and digital technological equipment remain the components of information infrastructure basis and enable the cyberspace existence. In this connection, these constituents of global communication can be considered the two main strategic resources for dissemination of internationally uniting virtual social contents on global level.

The increasingly significant place in the international relations discourse currently take the debates on Geocybernetics (Phillips, 2016; Paras, 2007; Reyes, Taylor & Martinez, 2006).Cybersecurity is considered the top of international agenda (Kuranda, 2018). The geocybernetics term refers to scientific perspective of the general laws of information change within a global complex networking systems (Stangu,2010). Geocybernetics is a scientific discipline that focuses the exploratory regulation principles of global interconnected action systems on the basis of general mathematical laws and management regulations (Stangu, 2010).Physical geography of cyberspace or geo cyber cartography (Taylor &Caquard, 2006; Reyes & Martinez, 2005; Jiang &Ormeling, 2000) deals with technological equipment of all types. This aspect can be considered to serve an appropriate platform that can enable distribution of virtualityin a certain geographical region.

Visualization of cyber cartography (Hecht, et al., 2011) and geographical hypermedia (Crampton, 2009) are considered the epistemology of science. Batty (1977) and Goodchild (1990) argue that virtual geography is a field of new media convergence. CentroGeo's Scientific Project with its cybernetic character was developed to focus the Scientific Management Model (SMM) (Jeong, &Barabasi, 1999). The SMM as a scientific strategy that constitutes of four blocks: human networking, heterarchical groups, a method to approach knowledge production and the international level (Reyes & Paras, 1999). There was produced the three-dimensional hyperbolic visualization of Internet topologies (CAIDA). The model can be considered an innovative mode of knowledgeproduction with a cybernetic character based on the science of geocybernetics. The main focus of the developed model is on communication and cognition processes of user`s interaction strategies within the global networking system in accordance with cybernetics (Reyes & Paras, 1999).

There were also invented cartographic mode maps that display information infrastructures in their global scale, and infrastructures in certain geographic areas (the Helsinki metropolitan area, the west London-M4 corridor, Silicon Valley). Via distributing virtual representations through the multichannel expanse of global cyberspace there should be payed a particular attention on its adoption to the technical equipment availability in a certain geographic region.There were already developed cyber cartography atlases of digital ethnography that display digital logistical infrastructure and material properties of communicational environment in a certain geographic area(Grubesic & Murray, 2005a; Grubesic & Murray, 2005b). Geographic maps are developed to indicate and produce the visual map-like interfaces into online virtual spaces (Grubesic & Murray, 2005a; Grubesic & Murray, 2005b).These aspects can be utilized to enable the effective international social interaction and communication and serve the basis for developing elaboration strategies for the international future cooperation and development.

In addition, the globalized networking cyberspace does not have anarchical configuration. The international cyberspace may be represented as intersubjective virtual unit constructed with certain informational zones and information infrastructures that are interconnected among one another. The developed design of the virtual world map and global cyberspace as the significant part of contemporary world division may serve the global international platform for global communication and digital cooperation, international consolidation of discrete societies. Online platforms may be considered the sustainable basis for future international cooperation and development.

3 Transformed Wallerstein`s theory

There had been held several debates on world-system structure theories based on division of the global system on center-periphery relation paradigms (Mathias, Buzan &Zürn, 2013). The fundamental perspectives of a world-system division on center-periphery relation paradigms in the traditional international relations theories were presented by Onuf (2017), Galtung (1971) and Wallerstein (1974).

Wallerstein (2004) presented an inter-regional world-system theory which is based on categorization of nation states as power units. The division is based on the analysis of various economic areas division. He contributes three main world categories of core, semi-periphery and periphery, according to the nation state`s relative position within the world economy.

According to Wallerstein (2004) core nations are represented with more complex state institutions that provide infrastructures with economic diversification, centralized governmental structure and specialize on information industry improvement. The distinctive feature of core nation states is their financial and [military](#) dominance in the international system. Wallerstein defines Canada, Australia, the United States, England, France, Netherlands as the category of core states. The peripheral nations are presented with Latin America and sub-Saharan Africa. The distinctive feature of this category is defined as weakly functioning institutional systems, high level of social inequality and poor economic diversification. The category of Semi-peripheral nation states can be represented by nation states that cannot be classified neither as core, nor as periphery. Currently, the status of semi peripheral nation states have BRICS countries, Israel, and South Korea.

Otherwise, there also should be took into consideration the availability of digital technologies, media technologies in a certain region. Information infrastructures that constructs the essential basis for global cyberspace existence as any kind of social structure also serves the catalyst for economic development in a certain region. Italso does make sense to argue that each geographic area is distinct with a special type of technical equipment, with each area having its unique technological landscape and potential for economic development in the future.

Core can be considered as a geographic region with widely-spreaddeveloped technological equipment on its whole territory. The individuals dispose on such territory the latest digital technological units, have the access to the global international cyberspace and are actively involved into multiple international cooperation. Periphery should be understood as the geographical regions on the surface of the Earth that were not, or almost not, absorbed by globalization processes, individuals on these territories almost don`t dispose the technical equipment and have the lack of access to the global international community. Periphery regions are also distinct with the lack of access to the education. On the periphery territories there isa lack of access to electricity and energy. Individuals that are located on the periphery territories have small access to available mass-media resources and to the global networking cyberspace, so that they are enable to be involved into global international development processes and have difficulties with access to the educational online programs.

While considering regions of periphery it's important to take into account the lack of electricalaccessibility in those regions, which is considered a significant constituent for geopolitics of cyberspace future development. The absence of electricity enables the expanse of networking communications, the Internet within geographical area. This aspect also influences the type of technical equipment in the regional location. For instance, according to*The Harvard Forum I Research ICT*due to the lack of electrical power in African regions, 75% of mobile-phone users spend around 11%-27% of their household income on mobile communications (Ishkanian, 2011). Insurrectional movements in north Africa region and middle east raise up considerations on new communication technologies as sustainable development source in democratic world (Ishkanian, 2011).

Each geographic area on the world map, where advanced technological equipment is spread enough to create the virtual cyberspace corresponds to the semi-periphery. Otherwise, the online activities of individuals located on the Semi-Periphery territories are not so extensive as on the core territories, so that the complete involvement into international online cooperation might be difficult. To the semi-periphery territories there may refer industrializing and developing world regions. Within these territories individuals dispose information technologies and technical equipment, although, the intense of their operations in online spaces and involvement to the global development and cooperation is not such intensive as on the territories of core.

4 Intersubjectivity intra cyberspace

The basic social constructivism assumption stipulates and emphasizes the significance of intersubjectivity of social meanings. The notion stipulates a common system of social meanings that is shared among the members of a certain social group (Rogoff, 1990). The intersubjectivity, as a social constructivism concept, represented by the common system of social meanings and shared knowledge with a common social context and background (Prawat&Floden, 1994). Every system of common shared meanings is supported by a virtue of social interactions and communications among individuals also in a virtual space. As a result of social interactions and communications among the group members there occur thecommon understanding of basic principles of a discrete social reality space (Ernest, 1999). Intersubjectivity also serves the prism for new information interpretation in a particular society (Rogoff, 1990).

The virtual environment faces the international relations constructivist Agent-Structure problem (Wendt, 1987), although it occurs in a cyber mode. In this connection, international virtual platforms may promote the similar systems of social meanings and consolidate the international community and discrete social groups around the world.

The intersubjectivity promoted via virtual spacesis considered a vehicle for social interaction processes and information transmission among the group members in the international societies. So that, each community has the unique socio-cultural basis with promoted system of social values. The common intersubjectivity of social meaningspromoted via discrete online communities may consolidate andinterconnect discrete communities with one another via international global cyberspace.The reflection of intersubjectivities with an emphasis of their commonalities promoted via virtual environments may consolidate and incorporate people around the world. The unification on communication platforms in the global cyberspace and promotion of common systems of social meanings and intersubjectivity, in this connection, is considered to serve the internationally consolidating aspect and the appropriate platform for international cooperation and futuredevelopment.

5 Virtual power and cooperationvia global cyberspace

Traditionally, the concept of social poweris associated with a corpus of modalities that function as a machinery for social classes` conviction (Purvis & Hunt, 1993). Social power can also be understood as the complex system of prevalent norms and social values that function as a mechanism of individuals` persuasion to a certain kind of social structure maintenance (Laclau& Chantal, 2001).

Debord (1994) argues that a significant role incontemporary societies is played by promoted imagery representations. The significant attention can be payed to the roleof mass media resources in each geographic area as they serve a considerable part of social strategies (Altheide, 1984).Straubhaar (1991)determinates the concept of social power in the international relations as the interdependence relationship amongnation-state units, with each of them having its own political, economic, and cultural background and social basis.

The social power concept takes its roots in Gramsci's differentiating between concurrence as a mode of social power force in industrial societies (Gramsci, 1992). Gramsci argues that mass-media resources can influence the people`spolitical, economic preferences and their perception of discrete systems of cultural values(Lears, 1985).According to Gramsci, social strategies in a modern society maybe supported d by the means ofinformationspread(Lears, 1985).

Foucault (1980) considers the Internet to be the appropriate platform for social strategiesrepresentation and support. Ifthe globalized international systemthat nowadays partially exists in a virtualized form.According to Gramscian perspective (1971), the social strategies in modern societies may be also influenced by means of promoted information.

The global cyberspace can be considered the uniting international social platform for common spread of systems of social meanings and representations of intersubjectivity with focus on their commonalities.At this stagethe interpretative approach of virtual power concept may be pertinently introduced in its unique interpretation.The concept of virtual social power for individualsliein their ability to access the global cyberspace and particular type of promotedvirtuality that positively influences their perception of discrete systems of social meanings with their commonalities. Virtual power concept should be understood asconfiguredvirtuality promotion within the global virtual environmentof cyberspace with an emphasis on the popular type of technical equipment in a certain geographic region.Virtual powermay also promote and cultivate the common systems of social and cultural values via international cyberspace.

Barry Buzan considers identity and culture as the social security component in terms of the international perspective (Buzan, 2008; Buzan, 1998; Buzan, 1991). Consequently, the discrete type of promoted virtuality should consider the security aspects of each discrete society, particularly, individuals` moral discourse, their ethic values, and behavioral strategies intra objective reality of a discrete space of a geographic area. Such social power modality might be supported by international actors in order to promote internationally consolidating ideas on the global level.

Such modality of consolidating social power is supposed to serve the ultimate integrating international power distributed via available technological equipment in each region. The discrete laws for regional counterparts of cyberspaces should be taken into consideration and respected.

The internationally uniting power can be transmitted within the global international cyberspace in accordance to already developed cyber cartography atlases in order to distribute the appropriate type of internationally consolidate ideas within each geographic region and area.Technical equipment and digital technologies are considered the strategically important source essential for promotion of social values and cultural ideas. In this regard, virtual power serves the appropriatestrategic mechanism to unite the international community via global cyberspace globally. The virtuality may be purposefully transmitted within the global international space via available technical equipment capable to produce virtual extent in a certain geographic area.

In addition, the international system that partially nowadays exists in a cyberspace mode can serve the global platform for internationally uniting social strategies, global communication support and catalyst for international development. The virtual power can be considered a global communicationmediator between discrete nation states. This type of power is disseminated via available technological equipment in acertain region and geographic area. The appropriate type of available technical equipment within each discrete geographical territory matters and can be considered the important aspect while the geopolitics of cyberspace implementation and development.

6 Geopolitics of cyberspace as theglobally uniting strategy

The international cyberspace withvirtual platformsunites the representatives of international community all over the world. The information infrastructuresenablepeoples` interactions on the global level. In this connection, it can be claimed that all the technical equipment that is able to produce intersubjective virtual online spaces can be considered the essential component for the successful geopolitics of cyberspace strategy implementation. Moreover, the number of personal computers that are able to support connection to the worldwide network of the Internet during 1994 increased to 3,217,000 of machines (InterNIC) (Nunes & College, 1995). The virtuality construction as the product may be distributed via technological equipment within a particulargeographic area with an emphasis on social commonalities.

There was also an attempt to support the net politics is The Program on Liberation Technology at Stanford's Center on Democracy, Development, and the Rule of Law 2009 (Diamond & Plattner, 2012).ICT development also supports the distribution of digital technologies (Bonn &Akkermans, 2015), and in this connection, may be considered the significant constituent for international development support. These aspects create the sustainable platform for the international development and future cooperation with accordance to the geopolitics of cyberspace.

Geopolitics of cyberspace as the internationally uniting global strategy might be also associated with the phenomenon of virtual poverty and the immaterial labor. The concept refers to the availability of technical equipment and attributes of global wealth, such as the affordability of a personal computer and the broadband connection, which limits the admission to the upper percentiles of the population majority in the age of twenties and evenly subdivided by gender in countries of Europe, Japan, and the United States (Au 2007a, 2007b). Virtual poverty as the phenomenon can instigate ludocapitalism that reflects the interactive virtual games as actual power being the coherent apparatus with military and the market its two pillars (Burston, 2003; Dibbell, 2006). The immaterial labor invokes the information and communication diversity of procedures, being the cultural phenomenon or affective element of the commodity (Virno& Hardt, 1996; Dowling, Nunes, & Trott, 2007; Lazzarato, 1996; Virno& Hardt, 1996; Hardt &Negri, 2000).

Otherwise, it should be taken into consideration that the role of a nation state is little to prevalently influence or digital libertarianism in global cyberspace. So that internationally uniting social strategies should be implemented in accordance to existing regulations on national level. The cybercartography landscape and cyberspace law acknowledgement are essential to serve the basis forimplementation of efficient strategies.

7 Virtual games as the strategic tool

Currently gaming industry rapidly gains the popularity (Baltezarevic, Baltezarevic&Baltezarevic, 2018). Virtual games are not only a solid product that reflects a solid understanding of entertainment business, but also a significant part of modern pop-culture (Shaw, 2017; Wolf, 2017). Virtual games are considered the planetary hypercapitalism (Dyer-Witheford&Peuter, 2009). Game processes also refer to gamification adoption in surveying (Salganik, 2018). Moreover, games are considered a constituent part of a hybrid culture (Consalvo, 2006).

The actor`s ability to produce quality games is considered one of the key criteria of a economic and political success (Cornford, Naylor & Driver, 2000). Such companies as Adidas, Apple, American Apparel, CBS, Dell, Microsystems, Nike, Nissan, Toyota, Sun, Volkswagen besides the other provide in-game stores with availability of virtual equivalents of the diversity of offline products (Dyer-Witheford&Peuter, 2009). The process of virtual gaming also may require the high energy consumption and consumerism of gaming industry goods resident (Dyer-Witheford& de Peuter, 2009).The personalized avatar in virtual games might be powered by PC servers and annually utilize around 1,752 kilowatts of electricity per resident (Dyer-Witheford& de Peuter, 2009). Such advanced countries as Japan, North America, and Western European countries are nowadays areconsidered the most successful game producers and E-Sprorts supporters on the international market (Merwin et. al, 2018).

Each virtual game can be considered the designed system constructed by infographic data objects and contextual blocks (Diakopoulos, Kivran-Swaine & Naaman, 2011). Virtual reality spaces are systematically organized in compliance with a gameplay and levels. Gaming virtual reality that simulates objective reality world may contain either representations of social norms and cultural values (Bylieva& Nam, 2018). Gaming virtual reality or online gaming community may reflect social structure in a particular geographic region. Alternatively, it may serve a uniting social platform basis for new social norms formation and promotion (Martey&Stromer-Galley, 2007).

Collaborative and virtual environmental spaces constantly replace objective reality spaces and may influence social behavior strategies (Harrison &Dourish, 1996). So, as the communicative virtual environmental spaces online gaming virtuality may serve the social platform for new social norms promotion that would serve the internationally integrating social power. Gaming virtual reality and online gaming communities may also serve social platform for communication and the constituent part for geopolitics of cyberspace strategy.

Gamingvirtuality as the popular mass media resource that may promote and transmit internationally uniting social norms and cultural values may be adopted to the technical landscape on a particular geographic area and within a discretesocial reality.Adopted constructions of gaming virtuality may be distributed on the international market or via popular online gaming platforms, within the global multichannel cyberspace (Kiraly, King & Griffiths, 2017; Mayer, 2009). Gaming virtuality may also be adopted to the certain type of digital technologies and electronic devices, with further dissemination within objective reality space in a particular geographic area. Such strategy with promotion of common uniting social values on the international; level with utilization of virtual reality may be considered the successful geopolitics of cyberspace.

In addition, gaming virtuality adopted to appropriate type of technical equipment in a region and promoted within acyberspace environment or on the national gaming markets may serve the uniting form of internationally uniting social power that integrates young players all over the world. Virtual game may also serve theinternationally consolidating platform for promotion of common social norms and cultural values on the international global level.

In addition, the geopolitics of cyberspace diverse strategies may serve the internationally uniting social power. Moreover, gaming industry presented with online virtual gaming platforms, according to platforms policies and network infrastructuresin the discrete geographic area may be considered the means of internationally uniting social power. The support of these strategies may be considered the potential platform for international global cooperation and future development.

9 Conclusion

The dissemination of visual representations through the global cyberspace influences the international relations shape and perception of social norms and cultural values among young people all over the world. The global cyberspace servesthe uniting international environment andtheintegratingsocial platform for global communications and international development. Technological equipment and digital technologies that produce virtual spaces can servethestrategic tool in the international context. Virtuality that is designed audio-visual product and promotes the common systems of social meanings can be distributed either on the national markets or within the global international cyberspace. Artificial worlds presented in simulated gaming virtual realm can influence the individuals` perception of objective reality and influence the behavior. The efficient combination of these dimensions: appropriate gaming virtuality construction and technical landscape in a particular geographic area may serve an innovative integrating modality and integrating social power in the global context. The online platforms and spaces may serve the internationally uniting social platform for future cooperation and development on the global level.Distribution of virtuality via information infrastructures in global cyberspace might be implemented as a constituent part of thegeopolitics of cyberspace strategies. These strategies may serve the catalyst for the international global cooperation and future development.

The paper considers the global virtual environment the internationally integrating social platform with the distribution of virtuality as constituents of contemporary geopolitics of cyberspace strategies. The paper also considers the gaming virtuality as an appropriate strategic tool for such strategies. To elaborate the objective, the paper focuses the cyberspace and cybercartography concepts. This was followed by the proposition of transformed Wallerstein`s theory. The redefined alternative theoretical perspective represents the contemporary vision of the world-system structure division. The article finishes with the proposition of gaming virtual reality distribution as a means of internationally integrating social power that may serve the catalyst for international development from the global perspective.

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