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**AN EXAMINATION OF GEOGRAPHY AND GEOPOLITICS IN THE
LIGHT OF TECHNOLOGICAL DEVELOPMENT**

Abstract:

As numerous researchers in Poland and abroad say, geography no longer influences the development of political realities, since contemporary technology has allowed us to free ourselves from earthly limitations and to overcome the constraints applied by the earth. They further conclude that the power of nations and growth of societal and economic wellbeing are no longer dependent upon specific resources, localizations, or climates, but instead are conditioned through a certain attained base of production and level of technology. The purpose of the article is to formulate arguments which could show that such views are unjustified and entirely unwarranted, and that there is a need to make efforts at the restoration of classical concepts in geography and geopolitics as the useful means to understand the world.

Key words: geography, geopolitics, technology, international affairs

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Geography as a scientific discipline arose from the primary conviction that there exist links between categories of phenomena and processes which are seemingly foreign and juxtaposed to one another. This view guided the work of Alexander von Humboldt, the classic French geographers as well as geographers of the Polish school such as Wincenty Pol, Wacław Nałkowski, and especially Eugeniusz Romer and his followers. These figures often and with great conviction expressed the above mentioned view both explicitly and implicitly. Most important for them was the desire to present the unity of phenomena, which today would be called “natural” with those, which are considered to be in a general way totally different in nature, i.e. those phenomena having to do with people and the items they produce. We mean the unity of the world including man along with everything which exists without his participation, the unity of society and untamed nature, man and the land, as well as the relationship between nature and culture. This unity is expressed by the fundamental geographical precept defined by the “paradox of Humboldt”. This principle is presently utilized in many different contexts, but not always correctly used by the politicians of the European Union. This maxim simply states that the necessary condition for the unity of a given whole is its internal differentiation (“unity in diversity”). Only such a structural differentiation implicates the cooperation of particular elements, which are complementary, indicating a certain interdependence.

The examination of the interdependence of phenomena within the world, especially those interrelationships which are not so obvious, was the main goal of geographical study during the classical period of development within our discipline. One of these interdependencies is expressed in the relationship between localization (that is to say between the characteristics and phenomena which are influenced mostly by their localization), and the history of societies and nations². The interdependence of these variables serves as the basic foundation for the study of geopolitics which arose from geography. It's critics have often pointed to the mistake of determinism according to which the relationship between society and its biophysical surroundings are treated as a one-directional influence upon society and its traits, and therefore upon the fate of nations. In geography and in geopolitics as well, the relationships between differing types of phenomena, are examined within the context of interdependent categories of multifaceted influences. To be sure, biophysical conditions do influence the functioning of nations and societies. On the other hand however, societies and nations also affect these conditions, coordinating them and putting them to use in accordance to their own needs. Those societies and nations do that not only in association with technical and economic developments but

² Such a global approach advocated one of the classics of Polish geography Wacław Nałkowski. His first scientific treatise of 1885 was titled "Influence of the geographical location on national characteristics, and thus on the peoples' activities and the development of education, or even on the overall history" (Nałkowski 1963).

also according to the aspirations resulting from cultural conditions. Mainly due to the cultural factors, those relationships between societies and biophysical conditions maintain a quality of probability instead of determinism³. Numerous determinist models and explanations can be found in existing literature, which have as their goal the illustration of the ties between society and the land. These models should be treated as over-simplifications put into place for educational purposes only. The accusation then of determinism from those opponents of the disciplines of geopolitics and geography, lack cogent argumentation within a scientific context.

The period in the history of geography and geopolitics, in which representatives of these disciplines had to refute charges of determinism (both on the natural and economical planes), seems to be behind us. This does not mean however, that geography and geopolitics have been universally accepted as integral disciplines within the system of scientific knowledge. In congruence with the opinions of contemporary critics, it is the development of technology (especially that of modern means of communication linking the entire planet), which definitively ends the epoch of geography as an accepted, scientific area of study. Intercontinental air travels, ballistic missiles, satellite telecommunications as well as the internet have resulted in the fact that distance no longer serves as a barrier to

³ Founder of Polish geopolitics, Eugeniusz Romer believed that geography concerns the struggle of human will with determinism and vice versa (Romer 1964, p.107).

economic activity nor to societal development. In this context geographical location also has ceased to play a primary role of importance in such matters. With this in mind, the importance of geography is to be reduced, since it no longer possesses the ability to explain modern processes of development. This conclusion concerning the declining role of geography also carries with it a death knell for geopolitics, whose main purpose is to attempt to explain the past and present political occurrences within certain nations, through the sheer use of geographical methodologies alone (i.e. geographical location).

The attempts to undermine the status of the discipline of geography within the last decade, has been quite an uninterrupted phenomenon and its intensity has only increased with time. The effects of such pressure has resulted in a demotion of geography's position within the family of scientific disciplines, as well as geography's status within the consciousness of society. After the Second World War the effects of such a negative campaign lead to the liquidation of faculties and chairs of geography on many campuses of famous American universities (i.e. Harvard, Yale, Columbia, Cornell and Johns Hopkins), a reality which continues to this day. The analysis of documentation from that era, as well as the discussions which followed, allow one to conclude that the reason for such an unrestrained attack upon geographical studies was not waged from the outside, but instead from within geography itself, which accused itself of racism, whose main expression was found in the German

geopolitics during the Third Reich. An additional and more general cause for the demotion of geographical studies was the loss of confidence in geography's cognitive abilities in the face of "uniformization" processes. Jean Gottmann alludes to this with the following quote: *"too many are convinced that science and technology enable us to uniformize space and the minds of people. Regions and places, frontiers and boundaries do not count any longer in that philosophy"* (Karan and Mather, 2000, p. 90).

The next wave of doubt concerning the scientific status of geography occurred in the 1970's, when the famous American futurist, Alvin Toffler published a book under the title "The Future Shock". This world best-seller was translated into many different languages, bringing its author much fame. It floated various concepts, some of which did not receive any sort of confirmation in the following decades. One of the most bold and at the same time controversial claims of Toffler was expressed in a chapter entitled "The Death of Geography". In this chapter, it was not determinism nor the miscalculations of the geopolitics of German National Socialism which would constitute the main criticism of geography. Instead it was his conclusion that geography has no future since it deals with areal differentiation of the Earth surface, which disappears because of the inescapable effects of uniformization processes. Such processes Toffler argued are a result of the ever expanding culture of mass consumption as well as further economic and political integration. The

effect of such processes according to Toffler would be the disappearance of landscape differentiation because of the results of unified and accepted economic processes practiced on a world-wide scale, resulting in identical life styles regardless of region. The *naïveté* of such conclusions can be appreciated today, in the face of rampant effects of growing developmental disproportions and the resulting conflicts which are often explained away as being caused by civilizational differences. Although Toffler erred in his vision, his very popular and often uncriticized publications, without a doubt contributed to the weakening of the position of geography and geopolitics within the system of scientific knowledge. Not unnoticed are examples of outstanding representatives of the discipline of geography, leaving it for other areas of study within the realm of the social sciences. Although these are rare occurrences, one should not ignore them, since the decision to change one's area of study during the course of an advanced career is simply the result of desperation, which can lead to the partial or even total loss of one's life-long achievements.

Not long ago, the respected American quarterly „Orbis”, which analyses matters of international importance (having served well in the examination of matters of geopolitics in the past), included in the last year's spring issue an article by Christopher J. Fettweis, whose main premise was to argue against modern attempts at the restoration of geography and geopolitics, as simply unsubstantiated

and unnecessary (Fettweis 2015)⁴. According to Fettweis, geography no longer influences the development of political realities, since contemporary technology has allowed us to free ourselves from earthly limitations and „*to overcome the constraints applied by the earth*” (Fettweis, op.cit., p.246). In claiming this, Fettweis called for the abandonment of an era which has its beginning in the time of Plato and Aristotle, and during which the interdependence of politics and geographical realities was treated as an obvious fact. In order to support his claims Fettweis puts forth his own thinking on matters of classical and contemporary geopolitics, supporting them with the argumentation of two published authors from the middle of the XXth century (Harold and Margaret Sprout), who in turn borrowed from the views of the British political expert, Leopold Amery. All of those mentioned conclude that geographical factors have lost their value in the face of contemporary technological development. They further conclude that the strength of nations and growth of societal and economic wellbeing are no longer dependent upon specific resources, localizations, or climates, etc., but instead are conditioned through a

⁴ We must admit that the recent issue of “Orbis” (Fall 2015) was dedicated to geopolitics in honor of the Foreign Policy Research Institute’s 60th anniversary. In this issue there have appeared a series of articles justifying the need for geopolitical studies. They were mostly critical of the views presented by Christopher Fettweis (see e.g. Owens 2015a; Granieri 2015). Moreover the Editor of Orbis, Thomas Mackubin Owens himself criticized Fettweis’ argument in no uncertain terms in the essay introductory to the Spring issue in the “Editors Corner” (Owens 2015, p. 138-141). Nevertheless, for Polish researchers reluctant in relation to geopolitics the publication of the Fettweis’ article was a convenient excuse justifying the statement that “Orbis” joined in the crusade against geopolitics and geography.

certain attained base of production and level of technology. According to Fettweis and the authors he cites, the development of events has resulted in the hypotheses of geopolitics rendering themselves valueless. But because there are authors who continue to recognize the value of geographical factors having to do with international relations, he presents their views selectively (perhaps resulting from the space limitation of the article), to show their incompetence emanating from certain emotional attachments or ideological baggage. In this light Fettweis also treats the view of other authors, such as Robert Kaplan (2012), Jakub Grygiel (2006), C. Dale Walton (2007), Gerry Kearns (2009), and also Zbigniew Brzeziński (1997), along with many others, concluding that they are all (except himself and Harold and Margaret Sprout), in error. In the last words of his article Fettweis expresses the conviction that in the event that political geographers do not change their approach, they will simply watch from the side-lines as their research projects „*slide further into irrelevance*”.

The scope represented by “Orbis” as a respected journal and the resoluteness of Christopher Fettweis’ expressed views, prompt a detailed examination of his argumentation, since they touch upon the most important questions concerning geopolitics, as well as the conditions for its further cultivation. Has it ceased to be of importance from the point of view of development and security, who controls various territories, thoroughfares, pipelines and resources? Should

the position of our country within this part of Europe and the reality of who borders us no longer be of concern to us? Do we not need to take an interest in the important routes of transit, the direction of the flow of capital, as well as the arrangement of sources of supply concerning certain goods? If the answers to these and similar questions were not in the affirmative, it would be necessary to recognize geography and geopolitics as outmoded disciplines having outlived their usefulness. Even at first glance however, one can easily perceive that we are unable to make such an assumption. Quite the contrary, when hundreds of thousands of immigrants from the Middle East, immigrants foreign to our culture, flow into Europe, violently storming the barriers of the southern borders of Hungary, and while nations who border us seem helpless to maintain their sovereignty within their own territories, we must put even more weight on the importance of geopolitics. The proximity to our borders in which armed skirmishes take place and how close the roads of Muslim immigration come to us is a matter of the highest importance affecting the security and future of our nation. Better then for us to concentrate carefully upon maps, even though according to Fettweis' pacifistic tendencies, such things in and of themselves "*encourage the emergence of competitive, even belligerent strategies*" (Fettweis 2015,p. 247). Surely, pictorial representations delineating the borders separating countries as well as spheres of influence, have always inspired others to make changes, (both real and virtual), in existing

territorial divisions, not unlike those of a popular strategic computer games.

In his reflections, Fettweis attempts to communicate the stalwartness of his theories negating the value of geographical argumentation within the realm of political discussion, thanks to the support of three conclusions which fulfill a negative function; those being: the descriptive, predictive and prescriptive. In other words, in the opinion of Fettweis, classical geopolitics presents an untrue picture of reality, which in turn prevents the proper understanding of the inner workings which characterize international relations (1), leading to errors in the prediction of events (2), which in turn leads to bad political decision-making (3). Fettweis attempts to legitimize his theories through the use of negative examples from the history of classical geopolitics, borrowed heavily from the works of Halford Mackinder. In doing so, Fettweis attacks the fundamental position of Mackinder concerning the localization of the Heartland deep within Eurasia, and towards the end of his article negates the sensibility of discussing the idea of the “key position”, or the most advantageous localization from the point of view of attained strategic advantage. One would then pose the question at this juncture, why does it make sense for the United States of America to maintain incredibly costly army bases which are widely scattered around the globe? Why do Americans feel that it is necessary to maintain such bases in particular regions of the world? Or why does the Russian Federation feel so

strongly about the annexation of the Crimea, that it was worth the risk for it to suffer the consequences of economic sanctions from the international community at great cost to its own economy? This would be ever more perplexing since no great resources of oil or other natural riches are found in the Crimea. Of additional interest, one could pose the question, why the inheritors of the former Soviet Union do not wish to resign from their presence in the Middle East and find themselves actively supporting the Assad regime in Syria. It is doubtful that the cogent reasons for the recent Russian flyovers to help the Syrian government could be found in emotional sympathy of Putin toward Assad. More convincing are the reasons overlooked by Fettweis' arguments concerning geopolitics. The fact is, the United State and Russia do not seek dominance in various areas of the world for reasons of prestige, but instead because of "living interests" which flow from their concrete, economic needs. Each of these superpowers then, strives to expand the boundaries of economic expansion which in turn affects their banks as well as the sales markets for their goods (including weapons). These powers constantly seek to expand natural resources and trade routes (especially those having to do with energy resources), all for the purpose of having the upper hand in the process of economic decision-making which has meaning well beyond one's own region. For the world spins upon the "Wheels of Money", and geopoliticians, marking their maps according to "key positions" know very well the importance of such demarcations. Such maps

prove the inescapable, but often difficult to accept fact, that within the world there exists inequality, that there are places less blessed by nature, and that from these inequalities, injustice and conflict can result⁵. The surface of our planet is simply varied and no technology, uniformization nor globalization can change that. As Jean Gottmann once wrote, "*The homogenization conflicts with individual liberty and human nature, and this is why space is diversified and why the study of geography is necessary*" (Karan & Mather, op.cit., p.90). This is the reason that the regional mosaic do constitute the "great chessboard", on which some locations play the role of key positions – very valuable for attaining certain goals and particular interests. In brief then, the "Tofflerite" condemnations of the importance of geography and the publications cited by Christopher Fettweis are of little value.

In formulating his theories concerning the importance of the Mid-Asiatic Heartland, it is quite evident that Halford Mackinder did so employing the historical knowledge available at the end of the XIXth Century, basing them also upon the transport technology available at the time (i.e. navigation by steamship, train and horsepower). One can easily conclude that the subjugation of the Heartland (or the pivot region) is crucial to gain basic influences upon culture and governance

⁵ David S. Landes is of the opinion that the revelation of the „unpleasant truth” within some compromising sectors of geography, constitutes the reason for the erosion of the geography’s status among scientific disciplines. Landes further writes that "*geography is the bearer of bad news, and we all know therefore how such messengers are often dealt with*" (Landes 2015, p.22).

within the outlying areas as well (Rimland). On the other side, Russia for centuries played the role of Heartland, which remained secure thanks to the geographical factors, namely great distances and severe climate⁶. The history of Eurasia includes the recurrent encounters of the nomadic tribes of the Turan, with civilizations of the Near East, India, China, and Europe. As Poles, we accept such a concept, since we as a nation have often, within our own history, had to serve as the first line of defense against invasions from the East. It was so in the Middle Ages with the Tatar invasions and later with the invasions of the Turks and Kossacs, up until the XXth Century when Poles were again tested by the barbaric invasion of the Soviets in 1920, the goal of which, was to spread communism to the whole of Europe. Here, in the East of Europe, the geopolitical concepts ridiculed by Christopher Fettweis, seem well respected. In reconstructing the military campaigns from our past, one can conclude that the Polish school of geopolitics stood as a foundation of resistance which in turn saved Western civilization. Witnessing to this fact are the extensive diaries from the Paris Peace Conference of 1919, whose author was the very founder of the school of Polish geopolitics, Eugeniusz Romer. During the Paris Peace Conference, as during the Conference of Riga which concerned itself with the end of the war between Poland and Soviet Russia, Romer

⁶ A fact well known to historians is that since 1611, when over the towers of the Kremlin Polish flags fluttered, no one has managed to capture Moscow. Tragically ended all subsequent invasions derived from Rimland, including those of Napoleon and Hitler during World War II.

served as an expert in the official Polish delegation, thanks to whose geopolitical expertise, the borders of a newly formed Poland were established (Romer 2010). The pact agreed upon in 1939 between Soviet Russia and The Third Reich (known as the Molotov-Ribbentrop pact), was a result of the power of the Heartland joining forces with those of the Rimland. This was an unification act of the Heartland and Rimland powers, which carried with it great geopolitical significance and which ultimately led to the outbreak of the Second World War, something which Mackinder had feared. The Paris Peace Conference of 1919 had attempted to separate the two great powers of the East and of the West by creating buffer zones between them, of which Poland was the cornerstone. Like no other country, Poland was viciously attacked in September of 1939 from the west by Germany and from the east by the Red Army, becoming the first victim of a war which would eventually engulf the entire world. Christopher Fettweis most probably belongs to a later generation for whom the experiences of the Second World War have lost any concrete meaning, but to ignore the influences that these experiences had upon Mackinder, who had correctly read the signs of the times as indicated upon the geopolitical maps of that time, is reckless indeed. It is simply untrue that *“geopolitical theories may merely overlap with policy by coincidence rather than design”* (Fettweis, op.cit., p. 236). The Paris Peace Conference of 1919 in which famous experts and geographers from the United States took part (among others Isaiah Bowman),

serves as the most important and positive example of the influence of geopolitics put into practice (Romer 2010). The influence of geopolitics then, is of great importance for Poland which re-emerged after a century of partition as a large and free sovereign nation thanks to the fact that no one among those deliberating her fate in Paris, questioned her re-establishment on geopolitical grounds. The tragic decision by Germany and Russia to attack Poland in 1939, despite what Mackinder had warned of in his writings, had as its consequence the liquidation of the Polish “buffer-zone” as well as the outbreak of the Second World War⁷. Mackinder’s concepts found justification however when Germany attacked Russia, betraying the pact of cooperation between the Heartland and the Rimland. In the face of Fettweis’ precipitant judgments, one can deduce from this example alone the positive role geopolitics have played in shaping the historical events of the world. The outbreak of the Second World War on the other hand shows, how tragic consequences can appear when the results of geopolitical expertise are ignored.

It is important to keep in mind that Mackinder arrived at his formulations more than one hundred years ago under the influence of the specific economic, geopolitical and technological conditions which prevailed at the time. Therefore the criticisms leveled by Fettweis

⁷ Geopolitical position of the restored Polish state compatible with the concept of Mackinder, as an eastern bulwark of Europe, was presented by the Kraków scholar Jerzy Smoleński in the 30s of the last century (Smoleński 2012).

concerning Mackinder's formulation are not only unsubstantiated, but also unjust. During Mackinder's time his concept was not only viable, but served as an important element in the pool of knowledge, being readily employed and put to practical use. No one today holds that we should hold to the concept of Mackinder regarding international politics, but to completely ignore and belittle his theory's value is irresponsible evermore so since Mackinder himself is unable to enter into the discussion in order to defend his views. It is evident, that theories formulated over one hundred years ago will not necessarily maintain their vigor indefinitely. When dealing with geopolitics, there exists no one "theory" in the strict sense. The very concepts which Fettweis presents as "geopolitical theories" are really nothing more than historical generalizations possessing value in a context of probability; therefore their viability will at best, be limited to a confined period of time. Geopolitical theories do not exist simply because their testing would be very expensive and not humanitarian since it is tantamount with international competition, and sometimes could require war (performed by economic, information, cultural, or even military means). Geopoliticians accept their own situation then, according to which their concepts are verified (or falsified) in the course of live developments upon the international stage. These developments undergo changes which, in turn, automatically influence geopolitical realities, to force a certain reassessment of once established hypotheses.

Another mistake of Ch. Fettweis is stirring the geopolitical concepts (mistakenly called theories) with the products of geopolitical futurology that do not have the status of scientific theses. They are in fact the result of the simulation, strongly dependent on the initial assumptions. Calling such products of futurology geopolitical theories, as did Fettweis in relation to studies of Colin S. Gray, is a simple procedure calculated to discredit the whole geopolitics as an area of study. Where such an operation was not possible, Fettweis uses a method to ignore the facts. Examples of such conduct include to say that geopolitics was not able to predict the end of the Cold War. At this point it should be noted that the collapse of the Soviet Union and the communist system was predicted no later than the second half of the 70s of the last century⁸. As far as the very Cold War, in the current situation it is doubtful whether it actually ended. Except that now the enemy of the United States of America is no longer the Soviet Union, but much smaller and weaker Russian Federation, whose leadership remained, however, in the hands of representatives of the former communist nomenclature and the Soviet secret services. So it is clear that not announcing a final end of the Cold War, geopoliticians does

⁸ Many authors wrote of this problem in the unofficial press which appeared untouched by censors. The most renowned authors quoted along these lines were Leszek Moczulski, the founder of The Confederation of Independent Poland (pol. Konfederacja Polski Niepodległej) along with Alain Besançon, the very well known sovietolog, and Alexander Solshenitsyn, the well-known Soviet dissident. Their works, reproduced in mimeographed form, enabled Polish society to persevere through the difficult years of communist terror following the year 1981.

not mistaken. In this light, Zbigniew Brzezinski statements about the great chessboard (which Fettweis is trying to undermine), turn again to date.

The deciding factor contributing to the foiled nature of Fettweis' argumentation, lies in his mistaken conviction that a cessation of world conflict will somehow take place and that a "*golden age of peace and security*" will follow (Fettweis, op.cit., p. 239). He supports the assertion that "*warfare has been on the wane for decades*" with a number of quotations. In conjunction with this view Fettweis states, "*the empirical and theoretical literature on this phenomenon is immense and growing*". Fettweis then refers to a report by the Center for Systemic Peace published in 2011 as well as a similar report published by the Human Security Project prepared in 2009/2010. He also includes quotes from publications by J. Goldstein (2011) and S. Pinker (2011). Not one word does Fettweis devote to the many authors, who instead of falling into misguided surety concerning this imagined, new-found state of world peace, point through their own research, to quite an opposite reality, according to which over 70 conflicts of a serious nature are presently ongoing (this number being found on the website www.crisisgroup.org). In doing so Christopher Fettweis ignores the findings of such renowned centers of research such as the the Stockholm Center of Research for Peace (SIPRI), the Uppsala Conflict Data Program, COSIMO located in Heidelberg as well as the findings of American researchers of RAND,

Correlates of War. Through such a subjective selection of sources, Fettweis attempts to create within the societal awareness, a false impression of reality, one which is in direct conflict with the day to day reality as presented by daily life and by the media. In doing so, Fettweis strives to convince us that we live in a time of global security, when in fact, either all out war, military manoeuvres, amassing of military might (all resulting in hundreds of thousands of displaced persons, and other affects of military aggression), plague the international economic and political arena. It would seem prudent then to ponder what would serve as the motivation for one to proclaim such a golden era of peace and international security, when in fact the world situation is headed in the opposite direction. Not knowing the main motivation for such a divergence from the true reality of the world situation, one can only refer to its side-effects. According to Fettweis, peace is "good for humanity, it presents a challenge for geopolitics....It threatens to render tradition obsolete." As such then, Fettweis seems to tolerate geopolitics as a discipline, only during times of concrete conflicts. From the conviction that the conflicts of war are on the decline, Fettweis concludes mistakenly that geopolitics as a discipline has nothing to contribute to international relations. It is therefore important to note that no attribute of geopolitical research limits its usefulness only to times of concrete warfare, since geopolitics identifies the positioning and status of various elements within international politics during times of peace as

well. War is but one "method" of reaching a political aim, used only then, when peaceful methods prove themselves insufficient. Fortunately for the world, the great majority of conflicts are solved through diplomatic and economic means. Therefore it goes without saying that geopolitics also enjoys success in the sphere of economics, where "geo-economics" has become perhaps, the most important sub-discipline of geopolitics⁹.

Christopher Fettweis in his article, underscores his conviction that classical geopolitics more often than not, was mistaken in its "*inherently unfalsifiable theories*". Taking into consideration whether the above mentioned conclusion is subject to falsification or not, it is important to note that the the situation of "being mistaken in unfalsifiable theories" is quite common within the social sciences and it does not belong solely to the area of geopolitics. Scientific research derives its reason for being by posing certain questions to the world at large. The answer to the questions posed is most often in the negative and expressed as "no". Only occasionally does the world answer "possibly", or „maybe", which is in itself an answer which begs for further study and research within the area under study. If one was to conclude that the answers to the questions posed by scientific research should be in the positive (as Fettweis seems to expect from

⁹ The pioneer of the Polish school of geo-economics is Wiktor Ormicki, who, before the onset of World War II, studied the flows of capital between nations and regions (Ormicki 2012).

the area of geopolitics), one might be led to put into question the truly scientific character of such research¹⁰. Let us not worry then that at times it may seem that that which we do (as geopoliticians), may seem like an excursion into the unknown.

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¹⁰ Based upon the research relating to the natural sciences (1980's) of Włodzimierz Sedlak, the creator of the Polish school of bioelectronics and the author of many unusually accurate conclusions concerning the conditions of science.

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