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An exploration on integrated spatial issues in geopolitical conflict zones to describe the conceptual framework of ‘geopolitical brownfields’

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Land and urban management techniques in geopolitical conflict zones are globally associated with significant challenges, in which the built environment and their associated lands usually suffer from lack of essential elements, including, but not limited to, ownership status, accessibilities, clear governing policies, and real estate market values. To address the challenges associated with these kind of properties — usually abandoned — it is not sufficient to search technical solutions within the technical competence of urban planners, architects, engineers, economists, and other similar professionals and academics. According to the origins of geopolitical conflict zones, the problem was usually based on political and social conflicts associated with the geographical location of an affected area. In this sense, techniques within the social and political sciences are major elements to be associated with spatial models of analysis, would neatly fit into regional science studies.

This study suggests a conceptual framework that argues the necessity of a new land typology to conceptualise the issues associated with abandoned properties in geopolitical conflict zones. Correspondingly, this paper presents the nature and origin of the proposed conceptual framework, throughout the exploration of philosophical notions of space, power, geography, and politics. The nature of this conceptual framework, borrowed from the combination of the global understanding of ‘brownfield’ sites and the philosophical concept of power on space, was influenced by a Foucauldian philosophical approach, producing the notion of ‘geopolitical brownfields’. This conceptual framework is a new idea that is initiated by this study, and there are several important areas where this study makes an original contribution such as the field of regional science, and in particular in strategical researches on land management issues among geopolitical conflict zones. The term ‘geopolitical brownfield’ suggests spaces of contested powers, as all space is power and power produces space. This paper’s main concern is to advance the theoretical basis regarding challenges in dealing with disputed lands and properties in geopolitical conflict zones in a completely new conceptual framework via spatial integrated approaches, as an original

methodological contribution of this study to foster the regeneration possibilities of such properties. This research tends to focus on previously vibrant urban fabrics/districts/neighbourhoods which are today abandoned/degraded as a consequence of geopolitical conflicts rather than general issues related to brownfield lands. The conceptual framework of 'geopolitical brownfields' addresses the challenges regarding abandoned properties within cities and urban settlements engulfed in domestic or international conflicts, or urban areas fractured by social and religious division. The rare case of the Cyprus conflict has had a significant impact on the nature and origin of this study, as it provided a first-hand experience of abandoned properties, frozen in time, through more than four decades of an on-going geopolitical conflict.

Keywords: regional science, urban management, conflict zones, geopolitics, Cyprus, geopolitical brownfield, spatial integrated analysis

Introduction and General Overview

This paper was prepared as part of an on-going doctoral research on land management issues in geopolitical conflict zones. This study initially compared physical characteristics of abandoned and degraded lands/properties in geopolitical conflict zones with more typical brownfield sites, which are previously-developed and now abandoned properties. The result of this comparison, showed that abandoned properties in conflict zones share many similar physical characteristics of brownfield sites, such as being previously developed, or associated with a possible level of contamination, requiring a series of 'RE' concept interventions¹ (reclamation, remediation, redevelopment, etc.), in order to return these affected lands/properties to an improved state of functional use. However, there are differences that make geopolitical brownfields significantly distinct from classic 'brownfields', where the normative approaches by professional urban planners, architects, engineers, economist, and similar professions, are inadequate to address the challenges and possible solutions for these types of spaces. The differences can be described by referring to the origins of their degradation; the origins of normative 'brownfields' are associated with economic changes. However, these disturbed, degraded, derelict, and usually abandoned

¹ L. Oliver, U. Ferber, D. Grimski, K. Millar and P. Nathanail, "The Scale and Nature of European Brownfields," in CABERNET 2005: The International Conference on Management Urban Land, Nottingham, 2005.

areas in geopolitical conflict zones are mainly the consequences of political and social conflicts within specific geographical locations. Determining, identifying, and characterising these affected areas as an alternative land typology may help in resolving one of the pieces of the problem, and may open the possibilities to positively encourage the conflict resolution processes.

The role of space and geography, associated with social and political perspectives related to time, highlight the main aspects associated with these disturbed properties within conflict zones. Spatial analyses linked to social and political science², serve as a key analytic methodology to understand and clarify the problems associated with such affected areas. In this sense, the argument goes beyond the technical discussions on how to regenerate a declined zone, or normative urban and regional planning approaches, implemented by technocrats. Indeed, a specific geographical location (space) of such disturbed properties, associated with conflicts of interest (power) provide a powerful mechanism for integrating technical sciences into social and political sciences. The field of regional science as an interdisciplinary approach may provide stronger frameworks to deal with such disturbed properties in geopolitical conflict zones. David Boyce³ (2004) described the contribution of regional science to complex regional challenges as a comprehensive framework for the extensive analysis of regional phenomena, and the prospects of conflict resolution on the macro scale of regional and interregional conflicts.

The aim of the paper is to provide a conceptual theoretical framework based on integration of two general area of studies; the first area is related to land management issues responsive to global understanding of the term brownfield site, as technical and policy status on degraded/abandoned previously developed properties/lands. The second area is integration of social, political, cultural, and economical aspects responsive to the area of regional science. According to nature and intention of this study, the paper tends to focus on previously vibrant urban fabrics/districts/neighbourhoods and now abandoned/degraded as a consequence of geopolitical conflicts rather than general issues related to brownfield lands, in which the new notion of 'geopolitical brownfields' is introduced. Correspondingly, the specific objective of this study is to argue the necessity of a new land typology to conceptualise the issues associated with abandoned properties in geopolitical conflict zones. This conceptual theoretical framework is a

² M. F. Goodchild and D. G. Janelle, *spatially integrated social science*, New York: Oxford University Press, 2004.

³ D. Boyce, "A short history of the field of regional science" *Papers in Regional Science* , vol. 83, pp. 31-57, 2004.

new idea that is initiated by this study, and there are several important areas where this study makes an original contribution such as in the field of regional science, and in particular in strategical researches on land management issues among geopolitical conflict zones. The secondary objective of this research is to determine how the concept of power on space has produced such areas that is not only negatively impacting physical characteristic of an area, but also have an extreme impact on intangible aspects such as social capital, identity, and culture. The methodological approach taken in this study is based on an inductive research approach, in which it is intended to construct the conceptual theoretical framework of this study.

A brief overview on the history and background of this study illustrates the evolution of its complex framework. This research was initiated in 2009 as a postgraduate investigation in a Master of Science programme in urban design at a University in Northern Cyprus. Over the centuries, the island of Cyprus was a geopolitical asset in the hands of empires; the same situation prevailed in the modern era leading to an armed conflict in 1974 and divided the island into two parts. The southern part has gained international recognition, and became part of the European Union, in contrast with the northern part that remained an internationally unrecognised sector. This study was influenced by the fact that in this unrecognised region, in addition to militarised, closed, and/or prohibited areas which have been frozen in time, abandoned properties are numerous. A pilot investigation on the periphery of the Nicosia Buffer Zone on the northern side was completed. That initial study categorised and analysed the closed areas (the buffer zone, the internal border, the militarised zones, etc.) into 3 sections, according to their locations. The first section is located within urban settlements and acts as a geographical gap on the urban planning systems (i.e. the 'Nicosia Buffer Zone'); the second section is located in rural areas with the same characteristics and values of surrounding areas; finally, the third section covers areas or facilities such as the Cyprus International Airport, or has extremely impacted its periphery such as the closed Varosha district in Famagusta. The study was the first attempt to identify the buffer zone and its periphery as a comparative approach to 'brownfield' lands and provides prospects on brownfields in the periphery of the buffer zone in North Cyprus. This initial study on the rare case of Cyprus, affected by more than 40 years of an on-going conflict, proved an importance of further studies in integrated topics related to geography, urban planning, and political and social sciences.

This paper is divided into five parts. The first part gives a brief overview about the significance of the topic in addition to history as background of the study. The second part investigates on philosophical approaches regarding space, power, geography, and politics, where the concept of power on space is discussed with favouring Foucauldian philosophical perspective on space and power. The third part of the paper is devoted to investigation on the differences between classical brownfields and geopolitical brownfields, and how the notions of power and space can describe the distinguished and multidisciplinary challenge regarding such disturbed areas — in terms of physical environment as well as social, political, and economic issues — within geopolitical conflict zones. This part is the core of this paper, in which the conceptual framework of geopolitical brownfield has been briefly discussed and illustrated. The fourth part deals with methodological approaches of this study responding the complex and multidimensional challenges of such properties, in which the new idea of integration of social science and spatial analysis discussed in order to initiate a unique and adaptive analysis model for such properties. Finally, the conclusion gives a summary and concluding remarks, where the whole idea is briefly explained.

An exploration of the philosophy of power on space

To understand the framework of this study, it is crucial to explore the essential concepts of space and power, or indeed power over space. The paths of contemporary conceptual spatial theory (space) can be traced into the works of three contemporary French critical thinkers, Julia Kristeva, Michel Foucault, and Gilles Deleuze, which greatly influenced notions and theories on place and space. Russell West-Pavlov⁴ (2009), described the definitions of space by these influential critical thinkers: Kristeva considered space can take various forms that can take both psychic and subjective forms, while Foucault found it in direct relation to power and knowledge; lastly, Deleuze saw space as multiple flows through spaces of life. West-Pavlov (2009) suggested that locating a cultural artefact in space would reflect context, materiality, relationship, causality, and interaction, and in which space can be argued as a paradigm of intellectual enquiry. Correspondingly, his suggestion concluded that the three thinkers (Kristeva, Foucault, and

⁴ R. West-Pavlov, *Space in Theory*, Amsterdam: Editions Rodopi, 2009

Deleuze) dealt with the meaning of space as something produced and associated with a specific time and place that emerges out of a context. Furthermore, another French philosopher, Henri Lefebvre⁵ (1974), who had different opinions on many of the political and theoretical views of the other three philosophers, tried to bridge the gap between philosophy and reality in his book; he explained space as “the locus and medium of speech and writing”. He advocated the concept of social space as the fabric or the medium of relationships between subjects, actions, and environment, created and configured by human actions; in this sense, it’s a very similar approach to that of the three other philosophers. In this regard, it is important to consider also the notion of correlation between space and time as an important factor in each circumstances on any geographical location, advocated by Swedish geographer Torsten Hagerstrand⁶ (1970) who famously said: “...we need to understand better what it means for a location to have not only space coordinates, but also time co-oriented”.

Influenced by the French philosophical concept of space, this study has taken the simplified philosophical meaning of space as the product of our actions, or, in other words, as a dynamic process in which the producer himself is a part. To limit the philosophical debates and investigations of this study, Foucauldian perspectives have been taken as the cornerstone of further arguments on power and space. Foucault⁷ (1977), in his interview with the editorial board of the journal *Hérodote* strongly associated the concept of space with time, in which the matters or objects take place in space as processes of power. Furthermore, Foucault (1977) explained that the exercise of power goes beyond a simple normative understanding of power. He noted that power is a mechanism of the interaction and intersection of domination and circuits of exploitation, which also provide a supportive framework of each other; however, they do not coincide⁸ (Colin Gordon, 1980). More recently, Clare O’Farrell⁹ (2005) highlighted the five elements within discussions of Foucault on the definition of power:

“(1) power is not a thing but a relation, (2) power is not simply repressive but it is productive, (3) power is not simply a property of the State. Power is not something

⁵ H. Lefebvre, *The Production of Space*, Oxford: BLACKWELL, 1991.

⁶ Hagerstrand, T. (1970). What about people in regional science? *Papers of the Regional Science Association*, 24 (1), 6-21.

⁷ M. Foucault, Interviewee, *Question of geography*. [Interview]. 1977.

⁸ M. Foucault, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977*, C. Gordon, Ed., New York: Pantheon Books, 1972-1977.

⁹ C. O’Farrell, *Michel Foucault*, London: SAGE Publications, 2005

that is exclusively localized in government and the State (which is not a universal essence). Rather, power is exercised throughout the social body. (4) Power operates at the most micro levels of social relations. Power is omnipresent at every level of the social body. (5) The exercise of power is strategic and war-like” (O’Farrell, 2005).

Foucault (1977) highlighted seven components of geographical metaphors: as (1) territory, (2) field, (3) displacement, (4) domain, (5) terrain, (6) region, and (7) horizon. These components are important domains for understanding the concept of power over space, which is the focus of this study in terms of regional science. The concept of territory as the most important component within geographical metaphors is directly associated with legal aspects and politics, both of which demonstrate control of a certain geographical location by a certain kind of power. In many senses, territory and territorial behaviours are links with domains, in which the component of domain deals more with legal and political notions. The displacement component also has a crucial role in defining geography, and is directly connected with notions of territory and power, of which population transfer, militarised zones, occupied areas etc. are the consequences of this component. The component of terrain in geographical metaphors is directly in relation to geological and historical concepts with a link to patriotism. Also, the terrain component can be referred to the materialisation of territory and domains, in which land, property, and ownership practices can evolve. “Region” explains the domains and territories in terms of the concepts associated with the fiscal, administration, military, and governmentality spheres. The last component, “horizon”, refers to the future perspectives of a territory, domain, or region as a strategic concept. In view of all these points, Foucault considered geography as the condition for linking series of factors or notions of space and power that he tried to relate.

To take these components of geographical metaphors to spatial techniques within regional science, it is crucial to pay attention to integration of space and power into any spatial analysis models. Foucault (1982), in his interview with Paul Rabinow¹⁰ said: “space is fundamental in any form of communal life; space is fundamental in any exercise of power”. In this sense, this study merges the concept of space with geography, and power to social, political, and ethnical interests. Accordingly, it can be said that aggregation, contest and conflict of interest (power) over specific

¹⁰ P. Rabinow, Foucault Reader, P. Rabinow, Ed., New York: Pantheon Books, 1984.

geographical locations, produces hot spots. In fact, there are a variety of perspectives on geopolitical notions, which have been developed to address the issues related to power and space. The influence of Foucault's thought on power and space can be tracked among the works of contemporary scholars such as Saul Bernard Cohen (2003), Serge Cordellier (2005), Yves Lacoste (2006), Colin Flint (2006), Gearóid Ó Tuathail (2006) and many others who share the same mindset. As an example Cohen (2003), an American geographer, argues that since geopolitical hot-spots and geopolitics are an integration of geography and international policies, it is important not to define it as a school of thought, but as a method of analysis of geographical settings and political powers to determine how powers define geography or vice versa. Additionally, Tuathail, Dalby, & Routledge¹¹ (1998) stressed that it is extremely difficult to provide an exact definition for the term 'geopolitics' and it can be defined and understood through its history and the wide area of its practice, which demonstrate the non-existence of a monolithic definition of the term. In this sense Cohen¹² (2003) explained geopolitics as an analytical approach to assess the interaction between geographical settings and political process as a dynamic mechanism. He argues that, since policies and locations are influencing each other, geopolitics is all about the consequence of these interactions.

This study associates aggregation, contests, and conflicts of interest with the notion of power as the main argument of power over space, in which different interests of local and international actors vie for specific geographical locations, producing concentrations of possible conflicts. Additionally, it is also important to highlight that, in many cases (Cyprus, Eastern Ukraine, Iraq, Syria, etc.), conflicts appears also due to the structural definitions of boundaries between territories and domains in geographical regions, rather than just conflicts of interest among the local and/or international actors themselves. In these regards, Rutherford¹³ et al. (2011) noted that a poorly defined structure of boundaries between actors in a geopolitical hotspot may cause collective violence, and many factors may lead to violence when the spatial structure of territories and domains creates a tendency to conflict. In this sense, he argues for the importance of geography in the dimensions of social space – as explained in *Production of Space* (Lefebvre,

¹¹ G. Ó. Tuathail, S. Dalby and P. Routledge, Eds., THE GEOPOLITICS READER, London: Routledge, 1998.

¹² S. B. Cohen, Geopolitics of the world system, Oxford: Rowman & Littlefield Publishers, 2003

¹³ A. Rutherford, D. Harmon, J. Werfel, S. Bar-Yam, A. Gard-Murray, A. Gros and Y. Bar-Yam, "Good Fences: The Importance of Setting Boundaries for Peaceful Coexistence," 2011.

1974) – that correlates with other aspects of social science.

A conceptual framework of geopolitical brownfields

It would be useful to describe the origins of the term ‘brownfield’, so as to be able to discuss issues related to abandoned properties in general, and disturbed lands/properties in geopolitical conflict zones in particular. Although there is no accepted universal definition for the term ‘brownfield’, there is a general concept that is shared between different viewpoints. In all different definitions, the brownfields are addressed as lands (with or without permanent structures) that had been previously developed and had a function, and which now are no more in use (fully or partially), and are derelict, abandoned, or vacant. These kinds of lands may also be associated with kinds of pollutants and physical problems¹⁴.

These explanations illustrate the global understanding of the term ‘brownfield’ as well as complexity and multi-disciplinary aspects of it. However, the perspectives and approaches of an institution dealing with brownfield issues, in addition to its regional features, can significantly change the definition (table 1). This universal understanding of the term ‘brownfield’ will be addressed in this study as normative brownfields which are consequences of economic changes in a specific region, either caused by economic improvement or failure and traditionally linked with ‘deindustrialisation’ and/or ‘suburbanisation’ of cities (i.e. previously developed industrial and commercial lands, in addition to military facilities and bases, that have been abandoned). These types of brownfields appear at the edge or sometimes in the middle of expanded cities.

To have deeper understanding on why a piece of functional land became abandoned and marked as vacant, useless, or misused, it is essential to understand the local geopolitics of the area. Indeed, the classical industrial/commercial brownfields are generally linked to local geography, economy, and policy, which can represent as a local geopolitical issue rather than just a simple urban planning, economic, or environmental issue. Correspondingly, the multi-layer complex

¹⁴ DoE, 1992; Daley, 1993; Kunsman, 1994; CERCLA, 1996-2010; Beer & Higgins, 2000; Alker, Joy, Roberts, & Smith, 2000; USA Brownfield Act 107-118, 2002; Oliver, Ferber, Grimski, Millar, & Nathanail, 2005; English Partnerships, 2006; CABERNET, 2005; Dixon, Raco, Catney, & Lerner, 2007; Adams, De Sousa, & Tiesd, 2010; DCLG, 2006, 2010 & 2012; EPA, 2009; Maczulak, 2009; Swartjes, 2011; etc.

challenges associated with these abandoned properties may be illustrated as the realities linked with local geopolitical issues of a certain region. In this sense, this study suggests local geopolitics as a superior element in the production of these classic brownfield sites, which have been defined and reflected differently in different urban planning systems and policies. This new concept, which is difficult to ignore, requires further investigations and discussions in economics and the social sciences, in addition to urban studies. Correspondingly, the co-relationship between abandoned properties (brownfields) and local geopolitics, demonstrate the interrelationship between geographical settings, politics, economy, and space/place as fundamental. It becomes increasingly important to acknowledge the differences between normative brownfields, which are the consequence of local geopolitics, and other similar brownfields that are a consequence of local and/or international geopolitical conflicts. In geopolitical conflict zones such as Cyprus, there are sites that fall into the definition of the term brownfield, and they may be categorised and dealt by normative approaches¹⁵ (Shojaee Far & Atun, 2012); however, their origins are quite different, as they are usually linked to conflicts, violence, and armed forced events.

In this sense, it turns out to be quite complex and critical to deal with disturbed properties within geopolitical locations associated with conflict of interest from national and/or international actors, by means of the geopolitical interest of actors that are outside the area, apart from interests or the political conflicts that could exist locally. Conflict of interests, violence, and armed forced events in hot spots usually bring military and armed activities into urban environments that can produce sudden changes or on-going conflicts in urban systems, which may cause dereliction and abandonment of lands or even districts, such as Varosha in Famagusta¹⁶, Cyprus. In these cases, not just industrial and commercial areas turn to brownfields, but also vibrant residential areas; they may also contain a level of contamination as the result of military activities and also disruptions industrial and commercial operations. Consequently, in geopolitical hot-spots, the policy-makers will be struggling for the best proposals and strategic plans which do not always benefit either the non-local or local interests, or both. Correspondingly, it would be very naive to

¹⁵ M. Shojaee Far and R. A. Atun, "Prospects for Brownfields at the Edge of Nicosia Buffer Zone," in 17th International Conference on Urban Planning and Regional Development in the Information Society GeoMultimedia 2012, Schwechat, 2012.

¹⁶ R. Hooper and V. Venema, "Varosha: The abandoned tourist resort," 14 January 2014. [Online]. Available: <http://www.bbc.co.uk/news/magazine-25496729>. [Accessed 14 January 2014].

search for simple and normative answers to such complexity, in which defining and characterising this complexity would be an essential task. Therefore, this study tries to give flesh and bones to this complexity, through a deeper look into the nature and origin of the challenges associated with such disturbed properties.

Table 1 - Comparison of understandings about brownfield in different regions

	Concentrated action/ definition	Contamination	Cause		Vacant, abandoned, and/or derelict	Urban	Rural	Require intervention	Currently not in use	Partially occupied	Agricultural land or forest	Ancient historical buildings or monuments	All the land currently developed and used, even if contaminated	Former mines
			Normative (deindustrialisation & suburbanisation)	Geopolitics & conflicts										
USA	✓	✓	✓	–	✓	–	–	✓	✓	–	–	×	–	✓
UK (PDL ¹⁷)	✓	–	✓	–	□	✓	✓	–	✓	□	×	×	–	×
Spain	×	✓	□	–	□	✓	✓	□	□	□	□	–	□	✓
Germany	□	□	✓	–	✓	✓	–	✓	✓	–	–	–	–	□
CABERNET ¹⁸	✓	□	✓	–	✓	✓	–	✓	✓	□	–	×	–	✓
ALKER ¹⁹	✓	□	✓	–	□	✓	✓	✓	✓	□	□	–	×	–
This Study	✓	□	✓	✓	□	✓	✓	✓	✓	□	×	×	×	□

✓Included in definitions or understanding (must)

□ Maybe/possibility (inessential)

×Excluded from the definition or understanding (limitation)

– Not covered (the definition, guide, or related policy does not include it explicitly)

As a first step, these disturbed properties can be defined as a new land typology within a conceptual framework. These disturbed properties — usually abandoned or closed — are the products of the exercise of extreme power over all the components of spatial and metaphoric characteristics of a particular geographical location. In this sense, this study suggests a new land typology, which would bring to the fore all the complexities associated with these lands, and distinguish them from other normal degraded properties. In urban planning systems (with specific norms and rules) associated with political and social perspectives of different actors (the question of power), policies (disciplines) are posed as the solutions to particular problems. Indeed, unless it is not defined, as the correct question is never asked, solutions can never be

¹⁷ Previously Developed Land (PDL)

¹⁸ CABERNET (Concerted Action on Brownfield and Economic Regeneration Network)

¹⁹ Alker, S., Joy, V., Roberts, P., & Smith, N. (2000). The Definition of Brownfield. *Journal of Environmental Planning and Management*, 43(1), 49-69.

given.

In this conceptual framework, this new land typology suggests borrowing the global understanding of brownfields to describe the physical and spatial characteristics of such disturbed properties. However, the global understanding of brownfields would not be sufficient to fully describe these properties and there is need to describe the exercise of power over space, following Foucauldian notions. In this sense, this study suggests the new land typology may called “Geopolitical Brownfields” as a word which postulates that all space is power, and all power produces space; geopolitical brownfields would be the space of contested powers. This new term can shape and materialise a conceptual framework within regional science to provide a workflow of interpretations for professionals and academics thanks to a multidisciplinary approach. The acceptance of such a term will hopefully result in concrete institutional definitions and a variety of understandings, which may be a starting-point to develop solutions and policies in geopolitical conflict zones.

Spatial Integrated Analysis for the Conceptual Framework of Geopolitical Brownfields (Route Map)

In order to develop a scientific base for this conceptual framework, and to export it to the fields of research and scientific action, the development of an integrated multidisciplinary model of analysis is essential. Since this study is concerned about space and powers, aspects within regional science, include, but not limited to, notions of politics, sociology, urban and strategic planning, psychology, geography, geopolitics, and economy should be involved in an integrated mechanism of data collection, analysis, and results. Such models would be based on inductive research models that start with data collection, the observation of facts. The inductive pattern of such research and analysis model, leads to open-ended exploration, leading to the formulation of a series of hypothesis on the conceptual framework of geopolitical brownfields.

Boyce (2004) noted that the history and nature of regional science are interchangeable and bring together diverse disciplines in which social science is the cornerstone in addition to physical science and engineering. In this sense, there are two main elements in relation to the case of the

conceptual framework of geopolitical brownfields; spatial situations and characteristics of space, and the other concerning issues related to sociological frameworks, such as politics, sociology, and economics. In these regards, it is useful to mention the existence of a new integrated spatial analytic model, promoted since 1999 by the Centre for Spatially Integrated Social Science (CSISS) within the National Centre for Geographic Information and Analysis at the University of California, in which they advocate the integration of social sciences into spatial analysis models. Although this is a new kind of approach of spatial integrated analysis, their results show that the geographical location of an event or a subject of study is important in social sciences. By referring to the philosophical understanding of space as a product of action linked with time, the importance of spatial integrated analysis models promoted by CSISS should be highlighted. Michael Goodchild (2004), the principal investigator in CSISS, in his arguments on “Thinking Spatially in the Social Sciences” noted that similar to space as an integrated mechanism for data, social sciences can also be integrated into space that provides a mechanism to link science and policy. To better understand this integrated mechanisms, it is important to highlight a great deal of previous research on socio-economical systems, done by Hagerstrand (1970), in which he stated “time has a critical importance when it come to fitting people and things together for functioning in socio-economic systems, weather these undergo long-term changes, or rest in something which could be defined as a steady state”.

Generally speaking, place-based analysis could determine properties that differ spaces among the context of a general framework²⁰ (Fotheringham and Brunson, 1999). According to the argument of spatial integrated analysis models, Goodchild (2004) argues that the contribution of space and specific locations in the explanation and prediction of human behaviour and associated processes, resides in solutions to reduce problems within society through spatial integrated approaches to the knowledge of the individual and social behaviour. In this sense, location and space produce a strong mechanism to integrate various aspects of social sciences by means of its economic, political, and social processes of behaviour of societies linked to geographical locations, unlike isolated studies in different disciplines (Goodchild, 2004).

Specific attention to spatial integrated analysis models, as a possible approach to collecting

²⁰ A. Fotheringham and C. Brunson, "Local forms of spatial analysis," *Geographical Analysis*, vol. 31, no. 4, p. 340–358, 1999.

information - both physical and social - from specific geopolitical brownfield areas, would help building an integrated analysis approach. In this manner, the quantitative and qualitative data and analysis may take place in accordance to the locations of affected areas. In this sense, different types of data from multiple sources may be aggregated into geographical information systems to provide visual locational data in spatial integrated analysis. In addition to detailed data through building information electronic modelling approaches such as sampling certain locations to present and simulate related physical and spatial data of a given space will now be possible. All these techniques, taken together as a whole, may provide an special simulation and analysis mechanism for conducting academic or strategic researches on geopolitical conflict zones, which are usually associated with the challenge of physical, legal, or mental accessibility.

Conclusion

Geopolitical brownfields are the consequences of aggregation, contests, and conflicts of interest over a specific geographical location. This term, was coined to address the challenged regarding to abandoned properties within geopolitical conflict zones. This study argues that the concept of power over space, the exercise of different types of powers, which come from different types of interests of local and/or international actors over a particular geographical location (space) is important. This paper suggests a conceptual framework to deal with such disturbed properties in the context of land management issues within the domain of regional science. The new-born geopolitical brownfield terminology may shape and materialize a conceptual framework within regional sciences to provide a workflow of interpretations for professionals and academics through a multidisciplinary approach. The acceptance of such a terminology within regional science may result in possible concrete institutional definitions and a variety of understandings, which may be a starting-point to develop solutions and policies in geopolitical conflict zones. To deal with such conceptual frameworks, a pattern of inductive analyses through a spatially-integrated approach has been suggested, in which integrating the spatial characteristics of abandoned properties within geopolitical conflict zones into the aspects of the social science has been proposed. This paper tried more generally to demonstrate the possibilities of analysing disturbed properties by the exploration on the origins and nature of the problem. The paper ends its arguments by highlighting the importance of identifying such properties as a new land

typology in order to materialize and deal with the multi-dimensional challenges associated with abandoned properties in geopolitical conflict zones. Corresponding to these theoretical discussions, further studies on management issues are recommended regarding the lands in such complex areas in terms of governance model, roles of public and private institutes, roles of domestic and international actors, in addition to the position of local citizens.

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