

Discursive Maps at the Edge of Chaos

A Monograph

by

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Abstract

Discursive Maps at the Edge of Chaos, by Major Mathieu Primeau, Canadian Army, 63 pages.

Postmodernism and systems thinking indicate biases in military conceptualizations of the operational environment. Military planners, as operational artists, tend to see the map as the territory. Their cartographic choices during operational design—coordinate systems, scales, borders, and other visual perspectives—tie space and time together as a deliberate representation of “a truth” rather than one of meaning, tied to a purpose, and representative of the tensions that inform discourses. Most particularly, common boundaries depict exclusivity in a binary manner. They constrain operational design with excessive linearity and simplicity for the complex operational environment they aim to depict: a square peg for a round hole.

These biases can be mitigated through understanding maps as artifacts imbued with meanings, rather than ontological depictions of constrained realities. Such maps are discursive; they are constitutive and suggestive to the synthesis processes that occur during operational design. Fundamental to discursive maps is the understanding of how identity and space are invariably tied together. Politics then come to exploit this relationship in ways that create feedback, which when positive (reinforcing) tends to increase the meaning of boundaries and polarize conflict towards violence.

The edge of chaos is the fine line between disorder and coherence. Discursive maps embrace complexity towards the latter; they empower the arrangement of tactical actions in time, space, and purpose in the pursuit of strategic objectives.

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There is an energy independent to intellectual curiosity that is by nature extremely contagious. To know is to ask questions. My sincere appreciation to Alice Butler-Smith PhD for embodying this mantra.

Acronyms

ADM	Army Design Methodology
ADP	Army Doctrine Publication
ADRP	Army Doctrine Reference Publication
AO	Area of Operations
BCT	Brigade Combat Team
CAF	Canadian Armed Forces
CGSC	Command and General Staff College
COIN	Counter Insurgency
DIME	Diplomatic, Informational, Military, Economic
EU	European Union
FM	Field Manual
IDF	Israel Defense Forces
ISIS	Islamic State of Iraq and the Levant
MDMP	Military Decision Making Process
MEB	Maneuver Enhancement Brigade
OODA	Observe, Orient, Decide, Act
OTRI	Operational Theory Research Institute
SAMS	School of Advanced Military Studies
SOD	Systemic Operational Design
UN	United Nations
USSC	United States Security Cooperation

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Section 1 – Introduction

Writing has nothing to do with meaning. It has to do with surveying, mapping, even realms that are yet to come.

—Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*

Operational planning is indubitably a most complex affair, not only fraught with the risks of mass suffering and deaths in failure as in victory, but also dependent on a host of fluid constraints and restraints. The problems it addresses require finding and solving in a contextual space akin to chaos, but where the necessity for action remains paramount.

Military practitioners navigate this turbulent sea with the assistance of a relatively vast array of conceptual and procedural tools, which vary in function of purpose, but almost inevitably include some types of maps. Maps are everywhere, linking an almost infinite number of intangibles and tangibles to space, and in-printing on our cognition a sense of relative distance essential to the very ordering of chaos.¹ Maps are also produced by almost everyone, from scribbles of a manoeuvre option on a whiteboard to the very detailed products of terrain analysis. Hence, all operational artists are mapmakers when it comes to supporting the operational art, defined as “the pursuit of strategic objectives through the arrangement of tactical actions in time, space, and purpose.”²

Unfortunately, the history of dominant forms of maps and their pre-eminence for military planning implies a sense of formality and legitimacy that grants them excessive authority—or contextual immobility—for social discourses. In other words, systemic effects are limiting the usefulness maps can bring to military planning. The biases are involuntary, as far as they are

¹ “Pure chaos and perfect order are absolutes. A system can be described as more or less orderly, but once it crosses a line, it is chaotic. The line itself . . . has been described as a balancing or tipping point, but in complexity theory, it is called the edge of chaos.” Everett C Dolman, *Pure Strategy* (London: Frank Cass, 2005), 111.

² Army Doctrine Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2011), 9.

systemic, but they are also increasingly consequential in our interconnected world, and in “our age of ideologies.”³ In contemporary conflicts, defined as those that shy away from hegemonic powers waging total war, the enemy’s strength is often cognitive. Conversely, the Western World embrace of the rational, of Realism, and of Modernism, have conspired to create frames of thought focused on the physical. Maps follow suit, brazenly depicting “what is” in causal, objective and consistent ways. Such is the science, it is believed, with the art subdued.

Where maps fail is in creating a discourse that helps understand the emergent character of a problem and, through a prescriptive form, inform actions designed to address it. The essential ingredient of discourses, that of social systems, is vulgarized by assumptions that put individuals and communities as rational actors, and by considering that the result of their activities can be predicted from separate actions, as if they were bystanders of the system itself. This is convenient for mathematical modeling, game theory and the sort, but fails to account fully for the complexity of human thought and behavior. Maps are also designed with the user needs in mind, amplifying his/her mental models, as opposed to the community of actors who have a stake not in the product but in the discourse it creates. In the words of designer Klaus Krippendorff, this is a concern for “second-order understanding,” which in the domain of applicability of this work corresponds most ominously to our understanding of the enemy’s understanding.⁴

Analogies between mapmaking and design serve further purposes. Considering maps as artifacts, as would an Apple designer of a new phone, allows us to acknowledge that cartographic discourses are social systems with a life of their own. Both the mapmaker and the designer are therefore motivated not for knowledge for its own sake, but improving upon the system (ultimately the whole of society) through in part considerations of possible futures and their desirability

³ Alan Cassels, *The New International History: Ideology And International Relations In The Modern World*, 1st ed. (London: Routledge, 2002), 242.

⁴ Klaus Krippendorff, *The Semantic Turn*, 1st ed. (Boca Raton: CRC/Taylor & Francis, 2006), 65-70.

through the identification of present variables.⁵ As Krippendorff explains: “Re-searching the past for generalizable patterns is the established method of scientific inquiry. Searching the present for available paths to desirable futures is the method of inquiry in design.”⁶ This is the method used for this monograph.

In the selection of the Israeli-Palestinian conflict as principal case study, this monograph explores the link between identity, space, and ideology. This is not by accident, but rather complicit to theories such as those of Alan Cassels which postulate that ideological conflicts are on the rise.⁷ In those cases, space and identity are being politicized into spatial ideologies and new conceptualizations of territories. Accepting Harold Nelson’s and Erik Stolterman’s perspective that culture is an unnatural social structure that can be created by design, the case studies also aim directly at spanning the gap between a conceptual model and its pragmatic relevance.⁸ However, “one cannot observe meanings, only their effects on behavior.”⁹ Therefore, through a systems approach, an argument is made that touch points exist and can be exploited by military forces to produce desirable feedback. The challenges are great, and thus demand the sort of cognitive improvement to situational understanding that can only be provided by reconsidering the essential characteristics of maps such as discursive synthesis (or generalization), scales, alternate reference systems, and boundaries. In this endeavor, therefore, maps have the power to lead conflicts away from the abyss of chaos, both in its physical representation—war—and its metaphysical sense.

⁵ Ibid., 29.

⁶ Ibid.

⁷ Alan Cassels, *The New International History : Ideology And International Relations In The Modern World*, 1st ed. (London: US: Rutledge, 2002), 246.

⁸ Harold Nelson and Erik Stolterman, *The Design Way*, 1st ed. (Cambridge, MA: MIT Press, 2012), 22.

⁹ Krippendorff, 60.

Similar or related theories about cartographic discourses in support of military operations were found lacking. There is however a wealth of research in other domains from which this work seeks context and perspectives, and they generally fall in three categories.

The first, and most important, considers the legacy of the general systems theory developed by Ludwig von Bertalanffy in the 1930s. Since then, the domains of applicability of systems theory have blossomed, and in the military context the work of John Richard Boyd and much more recently that of Alex Ryan provide such examples. Systems theory has also often been internalized to the point where it need not be explicitly revealed in literature to serve the arguments proposed. This is the case with the phenomena of globalization, made popular by Thomas Friedman and Parag Mehta in the field of cartography. They argue that social rapprochements, economic interdependence and physical infrastructures are amplifying the complexities of our increasingly interconnected world regardless of the predominance of the traditionalist view of international power expressed in Realism. A further branch of complex systems theory also has to do with embracing the perspectives of a socially constructed world, pioneered by Peter Berger and Thomas Luckmann in their seminal work *The Social Construct of Reality*. These ideas are particularly relevant when considering humans as irrational actors that are part of the system and therefore have an influence upon it.

The second category considers the work of postmodernists such as Jacques Derrida, Gilles Deleuze, Michel Foucault, and Paul Virilio, and how they challenged thought patterns established during the French Enlightenment. Derrida's deconstruction theory is foundational, positing that in levels of meaning behind the manifest, that is the day-to-day social acceptance of a chair being a chair for example, meaning is the product of the relation between objects or phenomena as text, effected through language.¹⁰ While Structuralism further codified—or over-codified—these

¹⁰ Jacques Derrida, *Of Grammatology*, 1st ed. (Baltimore: Johns Hopkins University Press, 1976), 25.

relationships that exist within language, Post-structuralism later proposed that to understand an object or artifact, such as a map, it is necessary to study both the object itself and the systems of knowledge that produced it. These perspectives reinforce the duality of importance between the meaning of iconographies and the nature of social systems in discursive maps.

The last body of literature essential for this work further concerns geography or geopolitics. It considers them from the emergent definitions proposed by Jakub Grygiel in *Great Powers and Geopolitical Change*.¹¹ For him, geography has to do with the natural, which is not socially constructed, and geopolitics are related to the role of the human within this geography.¹² However, his work constrains some if not all actors of the social system of geopolitics as rational, arguing that geopolitics are objective, and “exist independently of the motivations and power of states.”¹³ When followed through, this argument leads to cartographies unconcerned with spatial ideologies; the very anti-thesis of this work. As will be argued, while pertinent at the tactical level, such cartographies do not support the cognitive and temporally fluid nature of strategy, let alone consider the rival or system frame of an opposition. Therefore, this work rather echoes the work of Stephen M. Walt and Robert Jervis, who consider geography as being most relevant in how it influences the perceptions in the cognitive, from the physical. Emergent postmodernist geographers like David Newman, Martin Dodge, and John Pickles also combine complex systems and social constructions to understand the cognitive role of maps, and explore their meaning. Much of their work “accuses

¹¹ Jakub Grygiel, *Great Powers And Geopolitical Change*, 1st ed. (Baltimore: Johns Hopkins University Press, 2008), 24.

¹² Considerations for Willard Van Orman Quine’s work on naturalized epistemology is necessary in order to posit nature as ontologically secure, and thus not socially constructed. This is in accord with the work of Peter Berger and Thomas Luckmann, and in opposition to the self-defeating rational typical of Postmodernism, whose argumentation for the absolute absence of any truth implies that its own theories cannot be valid. Therefore, for the purposes of this work, conceiving nature in such a factual way is not only necessary to accept geography as a valid science, but it is also essential to present as valid the very sort of questioning postmodernism proposes to the study of maps. Put simply, a map is not a map without a geography. Robert Sinclair, "Quine, Willard Van Orman: Philosophy Of Science | Internet Encyclopedia Of Philosophy," *Internet Encyclopedia Of Philosophy*, accessed December 5, 2016, <http://www.iep.utm.edu/quine-sc/>.

¹³ Grygiel, 24.

modernists of spatial ignorance,”¹⁴ to quote Mary-Jo Hatch and Ann Cunliffe. They have however generally abstained from extending their work into tangible pragmatisms for mapmakers, which this work attempts to do.

To explore discursive maps within the chosen domain of applicability, this work will first consider their discursive structure in relation to historical continuities from the Enlightenment to the Postmodern. It also looks into the concepts of complexity and social systems theory in order to frame cartographic discourses as constitutive of meaning-making. To complete this theoretical exploration of discursive maps, a model is introduced to link space, identity, and politics, framing maps as a tool of politics that create systemic biases, most notably towards statist perspectives. The second portion of the work considers some specific design considerations for maps in support of the operational art, applying in tangible terms the concepts investigated in the first section. Lastly, a case study of the Israeli-Palestinian conflict is used to reinforce both theoretical and applicatory elements of discursive maps within an actual and relevant geo-political context.

Section 2 – The theory of discursive maps

The communicative structures

The history of mapping is an intricate web of ways of representation and ways of interpretation. In this context representation relates to what information is depicted, and how, and is a matter considered more akin to a science. Interpretation relates to how the information of the map is understood by the user, who is then informed of its meaning, and thus constitutes more of an art. This sub-section proposes that such division between maps as art and science is misleading. The essential purpose of maps is rather their ability to communicate, a process where considerations for interpretation and representation are mutually dependent, treating the science and the art as co-

¹⁴ Mary Jo Hatch and Ann Cunliffe, *Organization Theory, Modern, Symbolic, And Postmodern Perspectives*, 2nd ed. (Oxford: Oxford University Press, 2006), 237.

constitutive. Fundamental to understanding the map, therefore, is to consider how it does not communicate to all individuals in the same way.

Examples of how maps are interpreted differently by users can be quite evident. Consider for example how, in 2007, Afghan informers to counterinsurgent forces often could not identify insurgent facilities from the “god-like” view of conventional mapping. Instead, they had to be sat through a virtual flythrough built with high-resolution imagery, at street level, in order to find their bearings. They simply could not conceptualize the top-down view of traditional mapping.¹⁵

In *Rethinking Maps*, Rob Kitchin, Chris Perkins, and Martin Dodge assign an equal value to the mapmaker and the map-reader when it comes to enabling their interpretation (see top portion of figure 1). They explain that maps “emerge in contexts and through a mix of creative, reflexive, playful, tactical and habitual practices, affected by the knowledge, experience and skill of the individual to perform mappings and apply them in the world.”¹⁶ It is therefore consequent, in synthesizing matters of representation and interpretation, that the mapmaker’s primary role is to understand how his/her audience will understand and use the information he/she is depicting.

From a philosophical point of view, these three authors also identify other critical aspect of cartographic interpretation. Not only do maps depict the world around us, but they define it. “The map does not represent the world or make the world: it is a co-constitutive production between inscription, individual and world; a production that is constantly in motion, always seeking to appear ontologically secure.”¹⁷ This perspective certainly highlights the social nature of cartography, corresponding to the philosophical ideas advanced by Berger and Luckman in *The Social Construct of Reality*. In this context, maps contribute to the creation of reality in a process of

¹⁵ Source: author.

¹⁶ Martin Dodge, Rob Kitchin and Chris Perkins, *Rethinking Maps*, 2nd ed. (London: Routledge, 2011), 21.

¹⁷ Ibid.

externalization, objectification, and internalization.¹⁸ Nothing of our technological, institutional, or normative knowledge exists in any true form, as students of the Enlightenment framed it, but are rather created as ontologies through our social interactions. Therefore, our understanding of the world is common only in how it is being socialized. The bottom part of figure 1 represents this perspective. In this context, considering the case of the Afghan informant, his social environment has remained so far devoid of mapping of any sort, and thus the internalization of the ontologies in maps is nonexistent.

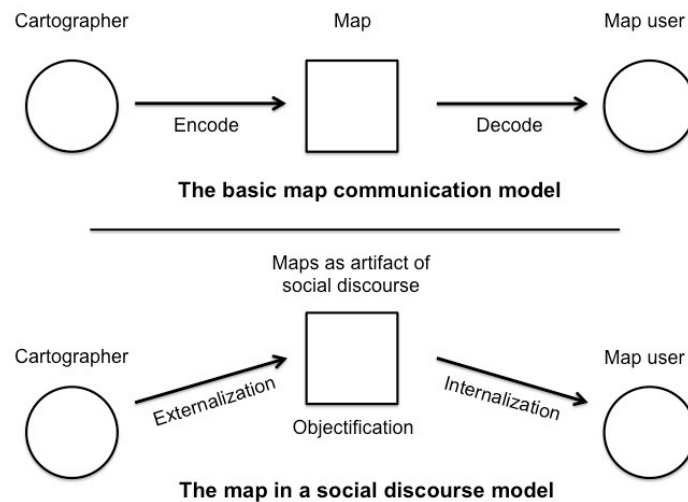


Figure 1. The basic and social map communication models, conceptualizing cartography in terms of stages in the transmission of spatial data from cartographer to reader via the map. Expanded by the author from John Keates, *Understanding Maps* (Harlow, England: Addison Wesley Longman, 1996), 114.

The science of maps

The last sub-section posited that interpretation as an art presents significant complexities. That said, neither the art or the science of mapping are subjugated to the other, nor are they separate entities that could be, for example, fully the responsibility of different individuals or organizations. Each map is rather both science and art, as their production needs to consider the “what” and “how”

¹⁸ Peter L Berger and Thomas Luckmann, *The Social Construction Of Reality* (Garden City, NY: Doubleday, 1966), 129-138.

just as it needs to consider the “why.” To explore the art, however, we first need to qualify the science, beginning with its historical roots.

The idea of cartography as a science traces its roots in late 18th century Europe. As John Pickles explains in *History of Spaces*, “it is the Enlightenment who first saw mapping as a representation of scientific truth.”¹⁹ Such limit of historical relevance is chosen despite its dependence on two pre-constituting developments. It was first necessary for common languages such as English or French to supplant Latin in higher education, which allowed the democratization of maps into artifacts of social knowledge. Also necessary was the need to move away from the obscurantism imposed by the ubiquity of theology as the primary field of higher study. As Arthur Herman explains in *How the Scots Invented the Modern World*, much of this was the product of the Scottish revolution.²⁰ The French Enlightenment then contributed to maps being seen as a method to understand the world, focusing on ideas of replicability, predictability, and the prevalent role of geometry.

The Enlightenment therefore acted as catalyst to further cartographic ontologies, that is new ways to describe and understand maps.²¹ Maps increasingly became a representative tool that complied with what Gaddis would define as a work of “actual replicability,”²² John Nielsen illustrates in *A Theory of Maps* the impact of this new representative power of mapping. He relates how Louis XV, after having financed an expedition to map the boundary of his kingdom more

¹⁹ John Pickles, *A History Of Spaces* (London: Routledge, 2004), 77.

²⁰ Arthur Herman, *How The Scots Invented The Modern World* (New York: Crown Publishers, 2001), 62-85.

²¹ Thomas S. Kuhn, *The Structure Of Scientific Revolutions*, 3rd ed. (Chicago: University of Chicago Press, 1996), 52-66.

²² John L. Gaddis, *The Landscape Of History* (Oxford: Oxford University Press, 2002), 43.

accurately, and discovering that it was much smaller than he had supposed, remarked that “he had lost more territory to his cartographers than he had ever gained in conquest.”²³

In this context, the Enlightenment saw most of western and central Europe covered by an extensive and purposefully accurate network of maps.²⁴ This was also concurrent to the mapping of European colonies, trade routes, and other elements of national interests. Maps were now essential to guide explorers, direct military efforts, establish and sustain trade, and organize societies in ways compatible to states. These practices were not new, however contextually they now aimed at the accurate representation of physical elements in space, meant to accommodate the point of view of the user. They were products of the “surveillant gaze,” a term that has been used to describe British land surveys since the 18th century.²⁵ This was opposed to the “cartographic gaze,” which the explorer Francis Drake used to decry sixteenth-century mapping. In the latter, also categorized as a diving perspective by Jeffrey Murray, errors, omissions, and inventions were frequent and used most frequently as a mode to represent power.²⁶ In other words, the ability to identify accurately and linearly scaled spatial relationships between natural or man-made objects or locations became central to mapmaking. Cartographic representations gained in accuracy while interpretations narrowed into the pragmatism of spatial relations.

Nevertheless, even as we go back to maps typical of the Enlightenment, they all exhibit some epistemological characteristics akin to complex systems. As Klaus Krippendorff explains in

²³ John N. Nielsen, "A Theory Of Maps," *Grand Strategy: The View From Oregon*, last modified 2009, accessed July 19, 2016, <https://geopoliticraticus.wordpress.com/2009/02/26/theory-of-maps/>.

²⁴ Azar Gat, *A History Of Military Thought* (Oxford: Oxford University Press, 2001), 76, and Martin Van Creveld, *Command In War*, 1st ed. (Cambridge, MA: Harvard University Press, 1985), 70.

²⁵ Mark Koch, "Ruling The World: The Cartographic Gaze In Elizabethan Accounts Of The New World," *Early Modern Literary Studies* 4.2, no. 3 (1998): 1-39, accessed August 9, 2016, <http://extra.shu.ac.uk/emls/04-2/kochruli.htm#fn41>.

²⁶ Denis Wood and John Fels, *The Power Of Maps* (New York: Guilford Press, 1992), 46.

The Semantic Turn, “meaning does not exist all by itself.”²⁷ From the fact that cartographic discourses are a social process, the interpretative value of the map inevitably differs from the initial representative purposes of its maker. The map is not a depiction of any truth about the world, ontologically secure, but rather also reveals meanings. Thus notably arises a non-linear perspective, particular to complex systems, where proportionality between input and output is lost.²⁸ Consider the arguably “modernist” definition of the map making process by Jane Azevedo:

a good map requires more than just a set of data and a simple truth-preserving mechanism by which to represent it. Given the purposes for which the map is to be used, there must be a theory of what relationships an appropriate map for that purpose is required to represent, to what degree of accuracy and in what form. Where there are multiple interests, judgments must be made as to which is of prior importance, as they may not all be able to be represented with equal accuracy.²⁹

What is most interesting here is that, despite adopting essentially a modernist perspective, Azevedo introduces the complexity of judgment into the mapmaking process. This “judgment,” as a subjective process influenced by multiple actors and structures, acts as the catalyst towards epistemological value, especially when asking how map users will interpret these choices. The epistemological damage is therefore done, so to speak, at the very minute the mapmaker has to make a decision about what to depict, and quite obviously this happens the instant a map is made. Again, however, the map is not the only culprit, but rather complicit in the way it is understood and creates new epistemologies that are dependent on external actors, primarily the map user. In such way, the map thus also becomes an open system.

The relatively new perspectives of Postmodernism generally act in opposition to the ideas of the Enlightenment. What is pertinent is not to refute the notion of “truth” in the Enlightenment,

²⁷ Krippendorff, 31.

²⁸ Antoine Bousquet and Simon Curtis, "Beyond Models And Metaphors: Complexity Theory, Systems Thinking And International Relations," *Cambridge Review of International Affairs* 24, no. 1 (2011), 46.

²⁹ Gaddis, 46, quoted from Jane Azevedo, *Mapping Reality* (Albany: State University of New York Press, 1997), 110.

but to argue that “truth” is the answer to a method of questioning. In essence, Postmodernism derives from the paramount importance of language and artifacts as the source of meaning-making. Language acts as the structure, built around conceptual nodes with no relevance in themselves other than to relate ideas amidst other ideas to create meaning.³⁰ Artifacts are further representations of human centered conceptions, interpreted again through language but constitutive of form, gestalt beauty, weight, etc. As Krippendorff explains on the importance of the latter, “the attempt to routinely or mindlessly objectify such human-centered conceptions is a fundamental epistemological mistake.”³¹ Hence artifacts are at the manifest level a tangible representation of deeper metaphysical meanings.

There is a natural harmony between Postmodernism and social systems, the later the combination of complex systems theory and the assumptions of a socially constructed world. Paul Cilliers reinforces this notion in *Complexity and Postmodernism*, arguing that both exude “a sensitivity to the inherent complexity of the social, and a resistance to reduce or essentialize that complexity within simple one-dimension theories.”³² Considering the meaning of maps and the “why” of their iconographies as this suggests requires abstraction. However, it serves very distinct analytical purposes in allowing the relatively new conceptual toolboxes of this field of study to be leveraged towards a further understanding of maps. Conveniently, in the domain of applicability of this work, such study leads to actual applicability. The rest of the work will therefore study the map

³⁰ This explanation corresponds to the definition of Structuralism advanced by Simon Blackburn: “the belief that phenomena of human life are not intelligible except through their interrelations. These relations constitute a structure, and behind local variations in the surface phenomena there are constant laws of abstract culture.” Simon Blackburn, “Structuralism,” *Oxford Dictionary Of Philosophy* (Oxford: Oxford University Press, 2008).

³¹ This argument presents a central tenant of Post-Structuralism. Krippendorff, 23.

³² Paul Cilliers, *Complexity And Postmodernism*, 1st ed. (London: Routledge, 1998), 58.

from a Postmodernist and social system point of view, leveraging what Patrick Jackson and Daniel Nexon suggest as “the methodologically neutral aspect of discourse analysis.”³³

Discourses in complexity

So far this work explored mapping as both a science and an art. It focused on the former, from the period of the Enlightenment to the modern, to explain how maps have enabled spatial discourses. It also argued that the perceived simplicity of such maps is deceiving, in that they exhibit characteristics of complex systems best studied with conceptual tools emergent of Postmodernism. This portion focuses on exploring the map as a complex system with discursive value, confronting it with the effects of globalization. It also dives from ontologies into epistemologies. What results is the map standing more comfortably as an artifact of discourse, capable to steer cognitive thought purposefully amidst a jungle of complexity.

In simple terms a discourse is “the use of words to exchange thoughts and ideas.”³⁴ This definition can be further refined as a “mode of organizing knowledge, ideas, or experience that is rooted in language and its concrete contexts.”³⁵ What differentiates discourse from linguistics is that discourse analysis “aims at revealing socio-psychological characteristics of a person/persons rather than text structure.”³⁶ The term ‘cognitive’ further narrows this analysis into the realm of cognitive psychology, inferring that maps stimulate mental processes such as “attention, language use,

³³ Patrick T. Jackson and Daniel H. Nexon, "Relations Before States: Substance, Process And The Study Of World Politics," *European Journal of International Relations* 5, no. 3 (1999): 301.

³⁴ "Discourse", *Merriam-Webster* (Online, 2015), accessed October 9, 2016, <http://www.merriam-webster.com/dictionary/discourse>.

³⁵ Ibid.

³⁶ Viatcheslav Yatsko, "Yatsko's Computational Linguistics Laboratory - Traduction and Interpretation of his Monograph: "Reasoning as a Type of Social Discourse,"" *Yatsko.Zohosites.Com*, last modified 1995, accessed October 9, 2016, <http://yatsko.zohosites.com/integrational-discourse-analysis-conception.html>.

memory, perception,³⁷ and most critically in the operational art, that of “problem solving, creativity, and critical thinking.”³⁸ In essence, the quest for a cognitive discourse aims to go “beyond the sentence boundary,”³⁹ looking for deeper meaning-making attributes in maps. Such meaning-making therefore “designates the process by which people interpret discourses in light of their previous knowledge and experience.”⁴⁰ Therefore, maps stimulate a discourse, which when focused on the cognitive, contributes to meaning-making.

The phenomenon of globalization acts as a destabilizing force to any secure cartographic ontologies. It pits maps representative of formally legitimized political boundaries, most often of statist dominance, towards a conceptualization of how society is increasingly connected by economic, cultural, and social interactions external to contemporary geopolitics. Essentially, however, these arguments are not new to globalization. Liberalism and Transnationalism, both highly illustrative on the benefits of beliefs of international interdependencies for peace and stability, have existed in some way of form ever since at least the Treaty of Westphalia. As John Ikenberry explains in *After Victory*, they seem in fact to resurface as a sagacious idea at the end of most major conflicts. But they do not last, each time for slightly different reasons that seem invariably reduced back to problems of power and power conversion, albeit within an increasingly complex system of international legitimizations.⁴¹

A more convincing perspective of the impact of globalization is that of Hardt and Negri, who argue that “the centralized territorial power of the state is being supplanted by a diffuse

³⁷ “Cognitive Psychology,” *Glossary Of Psychological Terms* (American Psychological Association, 2013).

³⁸ Ibid.

³⁹ “Discourse Analysis - What Speakers Do In Conversation,” *Linguistic Society Of America*, last modified 2016, accessed October 9, 2016, <http://www.linguisticsociety.org>.

⁴⁰ Tania Zittoun and Svend Brinkmann, “Learning As Meaning Making,” in *Encyclopedia Of The Sciences Of Learning*, Norbert M. Seel., 1st ed. (New York: Springer US, 2012): 1809, accessed September 7, 2016, <http://link.springer.com/book/10.1007/978-1-4419-1428-6>.

⁴¹ G. John Ikenberry, *After Victory*, 1st ed. (Princeton: Princeton University Press, 2001), 50.

deterritorialized society of control in which corporations, international organizations and local civil society constitute networked systems of human management, regulation, and subjectification.”⁴²

Parag Khanna argues in a similar way in *Connectography* that “the nature of geopolitical competition is evolving from war over territory to war over connectivity.”⁴³ He posits that the political boundaries are no longer the most important man-made lines on the map, a bias consequent “to seeing the state as the unit of political organization, an assumption that only governments can order life within those states, and a belief that national identity is the primary source of people’s loyalty.”⁴⁴ In such way, “the era of organizing the world according to political space (how we legally subdivide the globe) is giving way to organizing it according to functional space (how we actually use it).”⁴⁵ For him, discursive maps therefore become those representing “devolution, urbanization, dilution . . . the genetic blending . . . , mega-infrastructures, and digital connectivity.”⁴⁶ Contentions arise, however, because his visualizations of the world are presented as a finality in themselves, as opposed to a further constrain on a pre-existing social discourse. An “inclusive remapping,” as he calls maps showing the mutual use of infrastructure, custom agreements, banking network, and energy grid between multiple countries, do not consider pre-existing spatial ideologies and consequent territorial ambitions. It is therefore no surprise he reasons “political goals imposed on a complex cultural geography from halfway around the world stand little chance of surviving.”⁴⁷

⁴² Michael Hardt and Antonio Negri, *Empire*, 1st ed. (Cambridge, MA: Harvard University Press, 2000), 228.

⁴³ Parag Khanna, *Connectography*, 1st ed. (New York: Random House LLC, 2016), 19.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid., 19.

⁴⁷ Ibid., 99.

Mapping political ideologies

The last sub-section proposed that political goals are not only difficult to impose, but particularly more so if not informed by a discourse on existing political ideologies as a function of culture, identity, and conventional space. This work now explores these political ideologies.

Paul James defines ideology in a convenient two-sentence format. First, he summarizes it as “patterned clusters of normatively imbued ideas and concepts, including particular representations of power relations.”⁴⁸ Implied is that ideology connects individuals—and their identity—within a community arranged towards common interests. In adding that “these conceptual maps help people navigate the complexity of their political universe and carry claims to social truth,”⁴⁹ they acknowledge the social structure of these communities and that their common interests can be politicized. This work considers ideology in this form, adding that the invariable association of identity and space, when politicized, leads to spatial ideologies. In return, the way the space is perceived and legitimized brings about new territorialities, which in encroaching on each other cognitively lead to physical conflict. The consequences of this model are central to the “raison-d’être” of discursive cartographies: they allow finding touch-points within the system to effect a desired feedback, depicting alternate territorializations and desired futures.

In *Ideology and International Relations in the Modern World*, Alan Cassels analyzed what he calls “partial, unsophisticated ideologies,” that is “ideology in the sense of a collective subconscious mentality or belief system.”⁵⁰ This in essence is a perspective on the political ideology of nationalism; the “last great image of unsophistication.”⁵¹ He concluded that “the ubiquity of nationalist feeling has been matched by its endurance in the face of twentieth-century

⁴⁸ Paul James and Manfred Steger, *Globalization And Culture, Vol. 4: Ideologies Of Globalism*, 1st ed. (London: SAGE Publications, 2010), 449.

⁴⁹ Ibid., 451.

⁵⁰ Cassels, 242.

⁵¹ Ibid., note 7.

efforts to promote a contrary internationalism.”⁵² In other words, it is seen as a contemporary problem not yet successfully addressed. At its roots, “nationalism holds that human beings are naturally divided into nations, and that these nations have the right to self-government.”⁵³ This is in opposition to what is characterized as post-Westphalian international relations, which remain statist in conceptualizations of societies within the international anarchy, and “enshrine the age-old norms of state sovereignty and nonintervention.”⁵⁴ Hence, nations and their affiliated ideologies are not only counter-current to the formal legitimization of the international system, but act against their hegemony.⁵⁵

The tensions between states—and nation-states—as political units and those of a nation is therefore in part a consequence of the projection of power of hegemonic states over the international arena. Democracy and economic liberalism also contribute to the tension, because both need boundaries to function. These include the delineations of representative and legislative jurisdictions that create and enforce laws that control immigration, or measures of economic protectionism such as customs and tariffs. This therefore reinforces that nationalism invariably affects identities with spatial elements that are in contradiction with those of the state or nation-state perspective. In such manner, political Realism maintains its supremacy.

The propensity for violence is also amplified in conflicts that are imbued with strong identity politics, as effects nationalism. Erosion in the monopoly of violence held by government authorities can lead to further violence within informal structures (non-state) or within the population. “On the one hand, the monopoly of violence is eroded from above, as some states are increasingly embedded in a set of international rules and institutions. On the other hand, the

⁵² Ibid., 246.

⁵³ David H. Kaplan, “Two Nations In Search Of A State: Canada's Ambivalent Spatial Identities,” *Annals of the Association of American Geographers* 84, no. 4 (1994): 586.

⁵⁴ Ikenberry, “The Illusion of Geopolitics,” *Foreign Affairs* 93 (2014): 6.

⁵⁵ Ikenberry, *After Victory*, 61-64.

monopoly of violence is eroded from below as other states become weaker under the impact of globalisation.”⁵⁶ Thus, violence and ideology, particularly nationalism, tends to be perceived as a threat to states.

Chris Brown and Kirsten Ainley argue in *Understanding International Relations* that while the Westphalian state has become “a territorial political unit, . . . there is clearly no necessity that politics should be arranged on a territorial basis.”⁵⁷ Hence, accepting alternatives and mapping them, we proceed towards further understanding the operating environment and possible futures. A key approach is to explore the ways of politics.

Politics has been described as “always and essentially oppositional; that is, about division, about who’s in and who’s out,”⁵⁸ in essence mirroring the effect of boundaries on social structures. Politics also do not occur in any vacuum, and therefore who’s in and who’s out implies that there are systemic effects between the two for which to be concerned. These have been extensively studied by Robert Jervis in *Systems Effects*, and provide multiple insights.⁵⁹ What is essential for the scope of this work is emphasizing that any discourse on either is dependent on the other, as both are actors within the international political system itself. More to the point, both nationalistic and nation-state politics, for example, are socially constructed, meaningful to some in ways different to others, and therefore should contribute rather equally to balanced discourses. This is not the paradigm, but rather an ideal to achieve.

A first problem of politicized spaces (or territory) that are misaligned with statist perspectives is that they are systematically misaligned with their international legitimizations.

⁵⁶ Mary Kaldor, "In Defence Of New Wars," *Stability: International Journal of Security and Development* 2 (2013): 4.

⁵⁷ Brown and Ainley, *Understanding International Relations*, 71.

⁵⁸ Ibid., 210.

⁵⁹ See chapter 7 in Robert Jervis, *System Effects*, 1st ed. (Princeton, NJ: Princeton University Press, 1997).

Boundaries that are not internationally accepted have a lesser ontological value within military and government discourses. This is in part the product of the Treaty of Westphalia, and representative of the prevalence of Western conceptions of states and nation-states on the international domain.⁶⁰ There is therefore a stigmatization of geopolitical boundaries that represent different levels of legitimizations. The stigma can be characterized as this: from the “top-side” political ideologies such as those issued of nationalism are seen as a destabilizing threat to the system, while from the “bottom side” they are an appeal to a social organization perceived to correspond better to its peoples, its culture, its identities, and by inference its needs, all according to a new conceptualization of space. It is also precisely such conflicting space, politicized into new conceptualizations of territories, that gives its spatial meanings to the politics of nationalism. Thus in maps depicting territorialities (accepted or aspired) issued of political ideologies other than those of states and nation-states, a more universal discourse is created. To achieve this, it is useful to consider how the stigma also generates two other phenomena.

The first relates to the awareness that non-statist geopolitical boundaries imply a direct opposition to a dominant view, one to which hegemonic world powers are likely to oppose out of a desire for stability and continuity into the Diplomatic, Informational, Military, and Economic (DIME) realms. For example, an extremely unlikely separation of Quebec would impact more than Canada; since it would add new trade complexity for the United States. For the United States to avoid intervention would therefore require a conscious effort towards here a new and nationalist Quebec, breaking the traditional frame of thought. This is unlikely to serve US interests, particularly for the “fait-Français” it may be wary of having to deal with. This is a very simplistic approach, but one only has to consider the challenge of the Israeli-Palestinian two-state approach to gain an appreciation for its complex and systemic nature, if for trade alone.

⁶⁰ Ian Hurd, "Legitimacy And Authority In International Politics," *International Organization* 53 (1999): 393.

A further phenomena is the procedural habit of mappers to conform their mapping to internationally accepted geopolitical boundaries out of deference to the formal (and assumed as legal) views of their own government. Cartographic templates are manifestations of the paramount expectation that such boundaries are not only necessary, but required. And of course, who implies such dominance implies subjugation; thus nationalist boundaries are to be conquered, erased, or formalized, but rarely exploited. This dominance of internationally legitimate boundaries on maps therefore leads to a framing trap.⁶¹ Philosophically, state and nation-state geopolitical boundaries are therefore systematically unconstrained with socially constructed realities and excessively secured ontologically. Maps breaking this ontological imbalance between geopolitical boundaries of various levels of legitimization, or of various political ideologies, are therefore conducive to much improved discourses.

A model for spatial ideology

This section proposes to model the propositions that led to the conclusions achieved so far in this work. The purpose is not one of repetition or emphasis, but rather an expansion of the thesis by identifying where and how, in the ideological system that leads to conflict, military forces can coordinate actions for desired results. It will illustrate the nature of the elements in the models, and set the stage for further applicability of this monograph for all mapmakers.

The central element in figure 2 proposes a model that describes the relationship between individual identity, the notion of space, and how politics act as the catalyst to create spatial ideologies. These in turn are a necessary foundation to territorial ambitions. An underlying assumption for this model is that within a systems approach, political ideologies and identity ideologies are both reducible to the notion of identity without affecting the model. This can be seen as going against the separation proposed by Mary Kaldor in *In Defence of New Wars*, where

⁶¹ University of Foreign Military and Cultural Studies, *The Applied Critical Thinking Handbook* (Leavenworth: TRADOC G2 - Operational Environment Enterprise, 2016), 107.

“identity politics is about the right to power in the name of a specific group; ideological politics is about winning power in order to carry out a particular ideological program.”⁶² What she proposes is essentially a distinction between access to state as either an end or as a mean to an end. However, from a systems perspective, any actor gaining access to state changes it in return. Thus political identity invariably implies ideological pressures on the system, making both perspectives epistemologically dependent on identity.

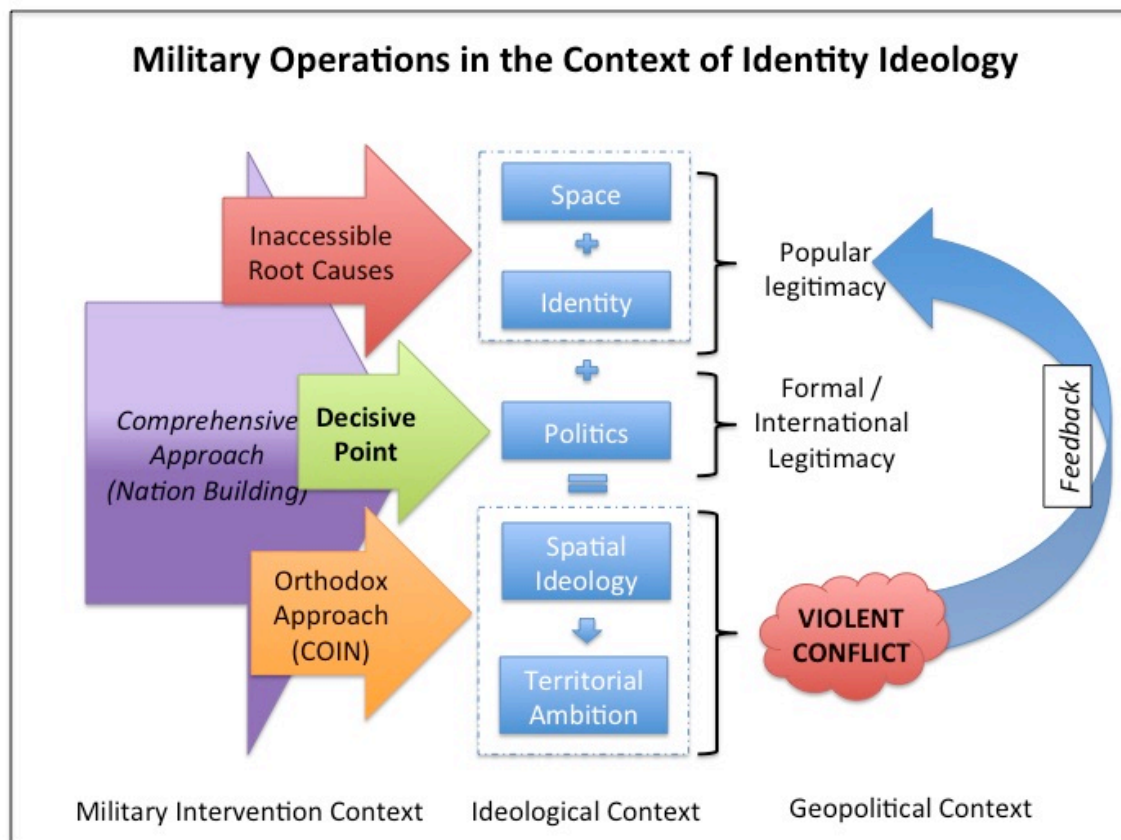


Figure 2. Model of military operations in the context of identity ideology. Source: author.

To understand this model, it is necessary to first consider how identity and space define each other. The reasons are twofold. First, identity is relative to the social environment that surrounds the individual, and thus changes with time and circumstances. The experimentation to

⁶² Kaldor, 5.

prove this theorem is easy: one only has to think of how differently he/she would have defined himself or herself ten years ago, or how he/she would do so differently faced with audiences assumed to have different identities. For an example on the latter, a French speaking resident of Quebec will not find it relevant to identify as a French Canadian in his home province, but will generally be compelled to do so overseas, even if he/she is fully bilingual. This illustrates the primary diffusive nature of identity, to simplify a postmodern concept.⁶³

To further the argument in the realm of collective identities, consider the work of David Kaplan in *Two Nations in Search of a State: Canada's Ambivalent Spatial Identities*, where he argues that French Canadians in Quebec have a very strong identity. After the decline of Roman Catholicism in the 1960s and the 1970s, the author explains that French Canadians generally considered their identity as (1) attached to the homeland of their ancestors from France, (2) associated with the French language, and (3) aligned with the provincial legitimizations of territorializations.⁶⁴ The point to note is that all three elements exist only in comparison—or opposition—to its surrounding English Canadian neighbors. Anssi Paasi reinforces this point by highlighting that “collective identity is not generated naturally but is socially constructed and produced by the social construction of boundaries.”⁶⁵

The second consideration is one of reverse logic. In arguing of an obvious spatial consideration in territoriality, yet accepting as this work does that physical space is part of nature and not socially constructed, then physical space exists before the social, and the social is affected by the physical space. Derek Gregory summarizes this by claiming that “social structures cannot be

⁶³ Aleid Fokkema, *Postmodern Characters*, 1st ed. (Amsterdam: Rodopi, 1991), 69-70.

⁶⁴ David H. Kaplan, "Two Nations In Search Of A State: Canada's Ambivalent Spatial Identities," *Annals of the Association of American Geographers* 84 (1994): 592.

⁶⁵ Anssi Paasi in David Newman, *Boundaries, Territory And Postmodernity* (London: F. Cass, 1999), 81.

practiced without spatial structures.”⁶⁶ In other words, identity is a social function consequent and dependent on space. This perspective is rarely explicit, but it is constitutive. The words and thus ontologies of “Quebecer,” “French,” “Canadian,” “Roman Catholicism,” and so on used in the previous example are all cognitive derivatives of a physical reality, respectively: the province created from lower Canada; the language that evolve from Italian Latin and beforehand Latium from Northern Europe; the Iroquoian word “Kanata” which means village; and “Rome” itself. No idea exists without an epistemology, and since the answers to questions are invariably anchored in a time and space as they are explored, they imply a spatial consideration. Therefore, consequent to these two observations, space and identity again inform each other.

Another useful aspect of complexity is what Jervis defines as emergence, which “links micro and macro elements of the system together and shows how causes at the lower levels of a system can have effects at higher levels.”⁶⁷ Bill Axelford further refines it in context of the phenomena he calls “glocalisation.”⁶⁸ In context, David Newman describes it as “the parallel impact of the global (macro) and local (micro) at the expense of the meso (state) level of political and territorial ordering. It is reflected in the global impact of economic and information spaces on the one hand, and the emergence of local and regional ethnic identities.”⁶⁹ Rather than understanding territorial change as part of a zero sum game in which global and state spaces expand, the notion ‘glocal’ spaces is seen as part of “a process through which territorial reconfiguration takes place at a number of scales.”⁷⁰

⁶⁶ Derek Gregory quoted without source in Hatch and Cunliffe, 237.

⁶⁷ Robert Jervis, *System Effects: Complexity In Political And Social Life*, 1st ed. (Princeton, NJ: Princeton University Press, 1997), 14.

⁶⁸ Bill Axford, *The Global System: Economics, Politics And Culture*, 1st ed. (Cambridge: Polite Press, 1995), 156.

⁶⁹ David Newman, *Boundaries, Territory And Postmodernity* (London: F. Cass, 1999), 8.

⁷⁰ Ibid.

Thankfully, alternate theories are emerging to confront this dogma. Gilles Deleuze uses assemblage theory to explain that what is observed at the local level can also be asymptomatic to macro-phenomena.⁷¹ Manuel Delanda uses the same approach but considers it from a social complexity point of view. Essentially, he proposes a flat ontology to individuals and collectivities. From this point of view:

moving up through nested systems, individual persons, groups and networks, organizations, governments, cities and states may all be viewed as emergent individual not reducible to, populations of individuals existing at lower levels of social complexity. The components parts of an emergent whole (or social assemblage) retain a level of autonomy and may, in the right historical circumstances, be detached and plugged into a different assemblage. This allows for the possibility that historically constituted social entities may be decomposed or restructured into new forms.⁷²

In more applicable language, this implies that groups of individuals with similar spatial ideologies can be restructured as a cohesive entity into a further group, or decomposed into new ones that can integrate into new social environments. In other words, it claims that a physical boundary between an orange field and its former Palestinian farmer does not preclude him from building new spatial ideologies, given the opportunity to adhere to a new social environment. Indeed, following the model, his new identity and space can be re-politicized, leading to a spatial ideology not congruent to the initial conditions. With proper understanding of the initial conditions, apt conceptual aggregation of social entities, the provision of a new social environment that satisfies the collective beliefs related to identity, and a controlled politicization, the Palestinian orange farmer could come to no longer resent a wall, those who put it there, and its impact on his social environment. This argument, it should be said, is not one apologetic or politically motivated towards the policies of Israel. It simply links the physical, cartographic and cognitive boundaries, and claims that only the latter form can be transfigured to create new identities leading away from conflict.

⁷¹ Bousquet and Curtis, 52.

⁷² Ibid., 53.

The thin cognitive thread proposed by Delanda is thus definitely worth exploration in our domain of applicability, that of cartographic discourses in military operations. It confirms that scales and the consequent generalizations of information are critical elements constituting the discourse. It implies that boundaries depicted on maps are relevant first and foremost in the cognitive realm. It reinforces that by effecting the political we can alter spatial ideologies, controlling territorial ambitions at the cognitive level (before they emerge as physical conflict), and within the proper environment re-associate collectivities without further alienations. This approach confirms the postmodern perspective that the map does not only shape time and space, its “cartographic imaginations influence the very structure and content of language and thought itself.”⁷³ Therefore, discursive maps do not sit at the edge of chaos, they lead away from it.

Considering again our examples of Israel and Palestine, what correspond to the dominant form of boundary depiction associated with international legitimization is in a first instance contentious to those of other legitimizations within the metaphysical realm. Second, the macro and the micro narratives of contested spaces in both dimensions do not fit as hegemonic blocks but feed each other through competing and conflicting narratives. Third, all these conceptualizations of space and territory are not only horizontal, as areas on a map, but vertical, forced by infrastructure for example, into a fluid diversity of spatial ideologies that overlap here or there to create different nuances of territoriality.

The effect of orthodox mappings are potentially disastrous in this specific problem. The bias for internationally legitimized geopolitical boundaries, as they effect in maps, constitute an unfair burden of opposition. The discourse is absent, and the boundaries suggest a bias that leads to a reductive answer. The mapper that ambitions to depict this is therefore challenged in having to overlap information that is meaningful in a complex manner, yet not homologous to the traditional single “y” attribute of a cartographic coordinate system. He or she is forced to leverage the power

⁷³ Pickles, 12.

of statistical maps, presented next in the applications section, to add additional graphical variables and densify the potential for meaning, or discursive value, of his iconographies.

Section 3 – Applications

This section considers how the perspectives discussed so far can be applied to creating discursive maps in support of the military operational art. It starts with a step back down to the ontologies of cartographies, aimed to reorient this work within the domain of applicability. It then explores the essentials of cartography from a discursive point of view, first considering its impact on generalization and how it allows the reconceptualization of scales and coordinate systems. The last portion has to do with boundaries, from their symbolism to their depiction.

The maps we have

The maps we have, as far as the military operational art is concerned, relate to visualization and understanding.⁷⁴ However, they are excessively reductive: they tend towards merging complexity into a linear and closed framework. Cynics could argue this is out of a desire for outright simplicity by military practitioners, but this is to confuse the “simple” with the “easy.” The bias is rather a product of the system itself, most specifically the tensions between the strategic and the tactical domain and how these are dealt with through the operational art.

The maps we have aim to assist planning, contextualized as “the pursuit of strategic objectives through actions arranged in time, space, and purpose.”⁷⁵ To frame this endeavor, the US Army primarily uses the Army Design Methodology (ADM), described as “a methodology for applying critical and creative thinking to understand, visualize, and describe unfamiliar problems

⁷⁴ Refers to the Commander’s understanding described in: Army Doctrine Publication (ADP) 5-0, *The Operations Process* (Washington, DC: Government Printing Office, 2012), 2-3.

⁷⁵ Corresponds to the US Army definition of the operational art in: Army Doctrine Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2011), 9.

and approaches to solving them.”⁷⁶ This method aims to pit a wide-ranging understanding of the current operational environment against the political aim, in such ways identifying the problem to solve, and breaking it down in an operational approach. This approach often become lines of operations, which are most representative of highly kinetic military problems such as those posed by a conventional fight against a near-peer enemy. They can also be lines of efforts, which are more abstract sequential processes that apply better to stability operations, where the role of pure military power takes a more secondary role to diplomatic, informational or economic activities. Reorganized one way or another, these steps become the operational approach, and aim to solve the problem identified.

As discussed earlier, mapping in support of the operational art expands beyond accurate spatial depictions in order to properly support a conceptual perspective. To better understand this sort of meaning-making, it is therefore useful to expand the explanation of Jane Azevedo, proposed earlier, and incorporate more of social systems complexities. In this context, Wilbur Zelinsky postulates that:

a map . . . has meaning only as it relates to other aspects of an interlocking communicative structure and can only be understood as one of several elements in a complex series of transactions, in constant state of flux, involving: (i) an objective reality “of some sort”; (ii) explorers or observers, (iii) the mapmaker; (iv) the document; and (v) the map-reader or, more realistically, a community of map-readers.⁷⁷

This explanation brings forth two central elements to the understanding of maps as supportive of conceptual planning in the operational art. First, it introduces the need for “an objective reality,” implying a dependence on a common ontology. This is a factual element of US Army planning, thanks to formalized planning processes such as the Military Decision Making

⁷⁶ ADP 5-0, 7.

⁷⁷ Wilbur Zelinsky, "The First And Last Frontier Of Communication: The Map As Mystery," *Bulletin of the Geography and Map Division: Special Libraries Association* (1973), 29.

Process (MDMP) and institutionalized military doctrine. Second, the explanation reinforces that meaning-making is only possible when there is that “interlocking communicative structure.”⁷⁸

The tensions between the strategic and the tactical warrant further investigation in order to understand the challenges of discursive maps in support of the operational art. The discourse between the two is strained by a multiplicity of factors that can quickly exceed the scope of this work, but some are particularly useful. Oft visualized at the “top” of the relationship, which is in itself a misleading assertion to the conceptualization of the discourse within the system, strategy aims at achieving depth of reasoning in the cognitive. Pragmatism is a factor of the political discourse, with a language of ontologies related to a more generic understanding than the military’s more precise doctrinal lingo. As Dietrich Dörner proposes in *The Logic Of Failure*, information required by strategic decision-making needs conceptualizations and synthesis to avoid leaders being “hobbled by excessive detail.”⁷⁹ Moreover, strategic time is open, fluid.

Considerate of the arguments above, the tactical level is often derogatively—from a systems perspective—conceived at the “bottom” of the strategic-tactical tension. It achieves depth within the physical realm, with pragmatisms found in deliberate considerations for the physical considerations and effects of actions. Tactical time is discreet, actions are synchronized. Thus in comparison to the strategic, it is less inclined to be viewed with a systems perspective. The tendency is rather to conceive it as a closed system, allowing linearity between actions and consequences. Whether that is a matter of pragmatism, to shorten the Observe-Orient-Decide-Act (OODA) loop as defined by John Boyd and manage the chaos of war, or as already mentioned to confuse the simple with the easy, are two points of view.⁸⁰ There is however no doubt that to frame in such ways tactics as a closed system is extremely limiting to the value-added of the systemic

⁷⁸ Ibid.

⁷⁹ Dietrich Dörner, *The Logic Of Failure: Recognizing And Avoiding Error In Complex Situations*, 1st ed. (New York: Merloyd Lawrence, 1996), 99.

⁸⁰ Osinga, 234-235.

discourse between the physical and cognitive perspectives of war, and of the competing views and frameworks (both friendly and enemy). It impacts the ability of the operational art to deal in matters of varied and perpetual, thus compensating for the differing and self-relating conceptualizations of time.

The consequence of these insights run deep, not only in informing on the importance of a systemic approach at the operational level, but in narrowing down the problematic within the domain of applicability of military cartography. That tacticians tend to visualize operations in terms of closed systems while strategy is more inherently systemic implies different perspectives for cartographies. The conceptualizations emergent of strategy thus need to balance the physical representations that affect actions. Moreover, it is more valuable to favor discourses than to attempt any framed typologies.

Consider for example the Yom Kippur war of 1973 and the 2006 Lebanese war. From what was discussed, in the first instance, maps supportive of the operational art would be expected to define the problem in terms of the effect of the operating environment on friendly and enemy capabilities. The assumption is made, or it is dictated, that the strategic objective consists purely of stopping the invading enemy through some kinetic action in a fixed place and time, here the state's antebellum boundaries. With such a rather conventional fight focused on the physical terrain, maps need to represent physical space at prima facie. Conversely, if we consider operations such as those of the Israel Defense Forces (IDF) during the 2006 Lebanese War, maps would be expected to dive much deeper into the matters of strategic impact at higher scales, ultimately of international legitimizations.⁸¹ This is consequent to the campaign being imbued with intense national strategic

⁸¹ The 2006 Hezbollah-Israel War consisted of an uprising of Palestinians and Hezbollah militants supported by various nations hostile to the State of Israel. It saw a heavy surge of terrorist attacks of all kinds, which included kidnappings and the use of missiles and other indirect projectiles aimed at civilian populations. Israeli Defense Forces General (Res) Gal Hirsch relates in *Defensive Shield* how, as 91st division commander, he was focused on the relatively narrow prosecution of the threat as perceived in time and space. Concurrently however, the government and higher command focused on isolating the conflict within the diplomatic, informational and political instruments of national power, through the ill use of Systemic Operational Design (SOD) perspective versus an emphasis on combined arms maneuver. The tension was

considerations that permeated all the way down to very low-level tactical tasks, and which can be said to “flatten the levels of war.”⁸² This type of warfare is hybrid, and implies a more systemic domain. It also suggests a much more diffused strategy. Destruction of the terrorists is part of the ends, but not obligatorily the ways, especially as targeting directly under an uncontrolled media environment may involve further risk losing the power provided by formal legitimization.

Hence, if there is a method for the mapmaker to achieve balance in the operational art, it is to continually ask how do the physical and cognitive perspectives of the war need to be typified in order to enable the discourse. Cartographies cannot assume the tactical as solely dependent on physical space, nor the strategic a concept entirely detached from it. They also cannot make easy assumptions about their primary discourses based solely on the nature of the conflict. They need to consider the communicative structures that diffuse the tension between the strategic and the tactical in terms of unifying ontologies, meaningful typologies.

Discursive synthesis: scale and coordinate systems

Achieving meaningful typologies starts with concerns for the combination of data at various scales, a process simplified as synthesis in the operational art, but known as generalization in the realm of professional cartography. Mapping has always been concerned with the technical issues of generalization, seen as the optimum depiction of information at changing scales as to not clutter the products. To take a map at an odd scale of 1:320 000 and blow it up to a larger scale in the hope of more detailed mapping and consequent planning, as Jarras’s proposed to the French

therefore between the imperative to act felt at the tactical level, with missiles falling on Israeli civilians at a significant rate, and the political and operational restraints imposed by an extremely-politicized and overly conceptualized operating environment. In more details, as far as mapping can be concerned, villages thought to house terrorists or hide weapons were perceived as priority targets at the tactical level and likely depicted as such. However, the strategy focused on international perceptions accommodated risks taken in cutting supply and communication lines, isolating elements of the conflict in either time, space or ideology, and allowing the substitution of narratives. Gal Hirsch and Reuven Ben-Shalom, *Defensive Shield* (Jerusalem: Gefen Publisher, 2016), 67-70.

⁸² Emile Simpson, *War From The Ground Up* (New York: Columbia University Press, 2012), 94.

General Neil during the Franco-Prussian war of 1870, would be an example of how not to do cartographic generalization.⁸³ However lurid this may seem, such concern remains a problem today, especially in digital command and control systems. What is digitized at one scale may not be suitable for depiction at another without a loss of precision, and potentially over-cluttering the map. While mitigated by automatic changes in the baseline mapping within the software, in function of scale, this solution only limits the discursive power of maps to the benefit of their speed of production.

When considering the prevalence of digital mapping in contemporary operations, the dilemma of generalization also takes another form. Translucent plastics and papers have allowed for many decades maps to be overlaid with data through the time-extensive production of traces. Nowadays, however, digital overlays allow on-demand superimposition of spatially referenced data of any kind and to any extent. However, unless constrained by the mapper (or software programmer) as a way to achieve deliberate generalizations, the communicative power of the map passes squarely away from limits of representation to limits of interpretation. The art of the cartographer is completely subjugated with the analysis of the user, losing in the process any intended discourse, and letting the data be objectivized and internalized without a-priori intent. The user therefore becomes the mapmaker, and he/she should heed to the perspectives of this very work if the mapping performed is to be socialized, that is shared to others for reinterpretation. In the new paradigm of digital mapping, these are not maps, but data repositories, and fall off the field of applicability of this work.

The dialectic between detailed and conceptual planning in the US Army Operations Process, discussed earlier, helps shed further light on the challenge of synthesis and/or generalization. It frames the perennial question of what information is to dominate mapping at each

⁸³ Geoffrey Wawro, *The Franco-Prussian War* (Cambridge, UK: Cambridge University Press, 2003), 50.

scales of a product. Is it the details, or the concepts? At what scale do the concepts replace the details, if ever? Much of this question corresponds to the balance required between typologies related to the strategic and the tactical, discussed earlier.

For military staff officers who have evolved from the tactical into the operational realm of war, there is often a cognitive limit as to their conceptualization of cartographic scales other than those who traditionally frame standard maps. What this means is that they value information of the tactical realm out of a pure bias. It could be argued this comes from their necessary right of passage in the tactical realm to progress in rank and access responsibilities related to the operational art. However, this perspective is also the consequence of an intuitive understanding that actions occur in time and space. In such a context, time is considered from the framework of an event, a period neatly framed, continuous but short. Space is also local from a conceptual perspective, constrained to the notion of the battlefield, the terrain, and its impact on operations. At *prima facie*, only the weather seems to be transient between these two dimensions. Therefore at the tactical realm, what matters is two dimensional, cognitively and cartographically: actions are arrayed in time and space. This perspective, obviously, is not only un-systemic—as in simple—but also false. The former is obvious: the system is artificially closed. It is also false because it implies, cognitively, that tactical actions have a subordinate role in the system, especially upon the “battle” and afterwards. It is quite normal for those engaged in the intensity of battle to seek the sort of simplicity this two-dimensional perspective provides to their actions, and this work does not argue otherwise. However, the challenge is to break this sort of habit for the operational art. As far as the map is concerned, the mapmaker’s judgment, as Azevedo said, increasingly needs to expand its understanding of time and space, and accordingly proposes visualizations that break the two dimensional paradigm.⁸⁴

⁸⁴ Gaddis, 46.

The first step between the tension of details and concepts is to posit that maps aimed at planning and at enabling a cognitive discourse require levels of abstraction that benefit both. The approach thus taken for cartographers is the same as for operational artists, in balancing their work between conceptual planning within the ADM, focused on design, and the detailed planning in the subsequent MDMP. However, this is not a mutually exclusive solution, as the problems of generalization endure in each step as both need to juggle details and concepts in their own way. Nevertheless, it facilitates cognition in balancing depth over breadth. Conceptual maps used in the ADM, for example, most often need to shed the unnecessary artifices of spatial representations that are more suitable to later detailed planning.

The problem of generalization can be even further theorized using the concept of fractals. As Gaddis explains, "we avoid the literal in making maps because to do otherwise we would be drowning in detail: the distillation that's required for the comprehension and transmission of vicarious experience would be lost."⁸⁵ However, as new information and improved means of storing and retrieving it come to play, maps have to negotiate a much tighter rope between what they can and cannot depict without losing their meaning-making ability. Again mappers have to "democratize information while representing specific interest."⁸⁶ The following three figures present examples of maps that deal with this dilemma in very efficient ways.

⁸⁵ Ibid., 32.

⁸⁶ Pickles, 13.

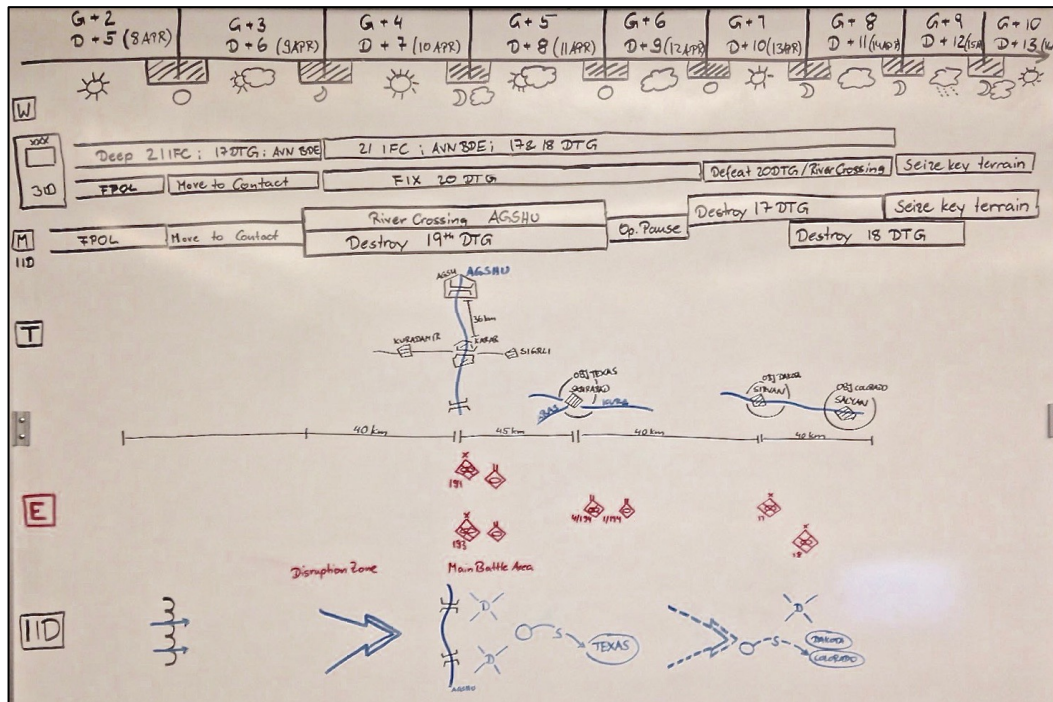


Figure 3. Discursive map proposed by Dr. Stanley of the School of Advanced Military Studies (SAMS) of the US Army Command and General Staff College (CGSC) in Fort Leavenworth, Kansas, adapted by Advanced Military Studies Program (AMSP) students for the purposes of a planning exercise. Source: author.

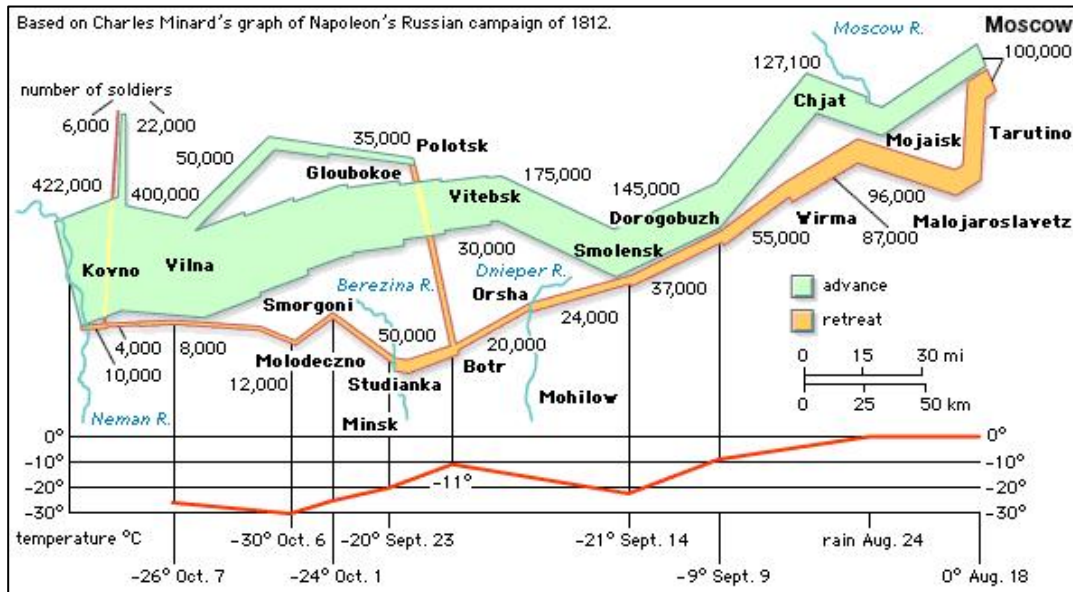


Figure 4. Statistical map of Napoleon's campaign in Russia in 1812. Original source Charles Minard, 1869. Modified, translated and re-published in Encyclopedia Britannica, Statistical Map Of Napoleon's Campaign In Russia In 1812, 2016, accessed October 10, 2016, <https://www.britannica.com/event/French-revolutionary-wars#ref171789>.

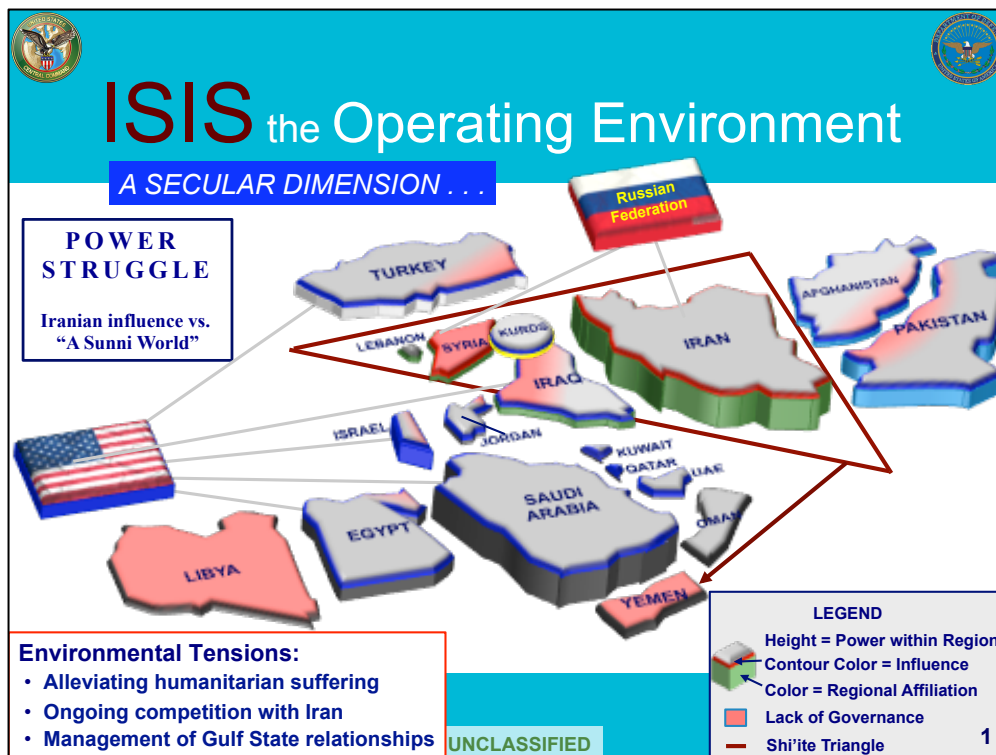


Figure 5. Map of the Islamic State of Iraq and the Levant (ISIS) operating environment, which allows the depiction of seven data fields compared to the foundational and more usual three (x, y, label): spatial location, name, governance (grey or red), power (height), regional powerbase (color of elevation), relationships with US or Russia, and lastly the "Shi'ite Triangle." Source: Author.

These three maps illustrate the dilemma of generalizations by embracing the idea of non-standard scales, non-orthodox cartographic coordinate systems, and on centering the discourse on non-spatial information. In the first instance, figure 3, planned tactical tasks are still organized in time and space, as a “normal” map would. However, by graphically depicting the details of the lines of operations along a purely vertical axis, this axis becomes an integrator for all other information equally tied to time and space such as weather, terrain features, enemy dispositions, or operational objectives. The discursive power of this map is therefore not only in its forcing function for the staff to integrate all of these factors into the plan, in terms of information density, but in the way it integrates the information about the operational environment along with the operational approach, in a cognitive link.

In the second map, figure 4, it is difficult to immediately appreciate what is the dominant axis of the coordinate system. The map-reader can clearly perceive the physical progression of Napoleon’s forces along the terrain, despite its oversimplification. Then, perhaps aided with a basic cultural literacy on Napoleon’s campaigns in Russia, and with a further gaze upon the map, the reader focuses his/her cognition on the sheer amount of human losses in the campaign. The dominant scale is therefore the quantity of Napoleonic troops, depicted in function of space, temperature, and time. Consequently, the tension of generalization, which considers scales and detail, remains fundamentally a function of the discourse intended.

Lastly, figure 5 presents an operational environment using a map that is graphically fragmented and rendered in three dimensions to allow ordered data fields that create meaning and stimulate discourses. Great care is put in color use and other elements of graphical design to order the ontologies created into their primacy of meaning, putting forth for interpretation representations of power first and foremost.

The discursive fallacy of conceptual planning

The continuing tensions between tactical details and concepts require a return to some basics. This work presented, from the point of view of Krippendorff's "first level understanding,"⁸⁷ that a map is an amalgamation of details into a whole. It "reduces the infinitely complex to a finite, manageable, frame of reference."⁸⁸ It does so by agglomerating multiple elements into new ontologies, which when constrained by the visual limitations of a chosen scale, is called the process of generalization. This confirms the paradox that even if the conceptual approaches in operational thinking appears to be based on approximations; those approximations are in fact the product of details that are generalized according to a purpose. If for the purposes of tactical action it is the conceptual that leads to the detailed, for understanding a rival system it is the other way around: the details lead to the conceptual.

ADP 5-0 suggests that this bias has not been fully internalized by the US Army. It does acknowledge that planning is divided in two components, conceptual and detailed, and defines it as "the art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about."⁸⁹ However, this is the action point of view: the conceptual into the detail. Conceptual planning is seen to "help commanders think through the challenges of understanding their operational environment, defining the problem, developing an operational approach, and articulating planning guidance that drives more detailed planning."⁹⁰ The argument here, again, is that it is not the conceptual that helps understanding, but the detailed as it informs the conceptual. This is especially true of the details of the rival system, obtained as subjected to our questioning.

⁸⁷ Krippendorff, 67.

⁸⁸ Gaddis, 32.

⁸⁹ ADP 5-0, 6.

⁹⁰ Ibid., 7.

The fallacy of the map user

The need to consider both the strategic and the tactical in creating discursive maps illustrates the communal nature of mapmaking in support of the operational art. Klaus Krippendorff suggests this insightful observation in *The Semantic Turn*, explaining how design (and by inference the map) has been affected by the shift between the low diversity of the industrial culture of the beginning of the century to the now high diversity of participation in discourses enabled by the information revolution and globalization writ large.⁹¹ The argument reinforces many other classical postmodernist views that as time and space have “shortened,” more actors (such as people) are involved in the discourse by virtue of access. For example, Jean-Francois Lyotard called this phenomena “the disappearance of the great master-narratives.”⁹² Paul Virilio is further quoted in *Pure War* that we are in the age of “micro-narratives,”⁹³ This infers that the discursive value of maps is increasingly dependent on multiple actors (people or groups), considered in design as stakeholders. In a military setting, these actors will generally include the commander, the staff section leaders, and subordinate unit commanders. This community also probably extends into higher echelons for operational nesting and to pursue their strategic objectives. Hence this debunks the primacy of the “map user” in the system of cartographic discourse. He or she is but one actor in the system.

Discursive boundaries

The demarcation of any area on a map creates a binary system of representation. Other depictions, such as cities, roads, units, but also any further graphics such as tactical symbols, are

⁹¹ Krippendorff, 63-65.

⁹² Victor E Taylor and Gregg Lambert, *Jean François Lyotard: Politics And History Of Philosophy*, 1st ed. (London: Routledge, 2006), 238.

⁹³ Kellner Douglas, "Virilio, War, And Technology: Some Critical Reflections", *University Of California In Los Angeles*, accessed August 5, 2016, <https://pages.gseis.ucla.edu/faculty/kellner/essays/viriliowartechology.pdf>, 231.

either “in” or “out,” included or excluded, of one area over the other. From a postmodern perspective, “Derrida observed that this is because modern thought is binary and binary thinking leads us to center our attention on one element of a pair while ignoring or denigrating its opposite or other.”⁹⁴ New ontologies are therefore created, as in new concepts and categories in a subject area that shows their properties and the relations between them.⁹⁵ In essence this seems both obvious and simple. However, the skillful use of all such types boundaries is one of the most important considerations in creating a cartographic discourse in support of the operational art.

⁹⁴ Hatch and Cunliffe, 16.

⁹⁵ “Ontology”, Apple dictionary (cloud-based, 2016), accessed October 10, 2016. Mary-Jo Hatch and Ann Cunliffe contextualize ontology within Postmodernism as “the belief that the world appears through language and is situated in discourse; what is spoken of exists, therefore everything that exists is a text to be read or performed.” Hatch and Cunliffe, 14.

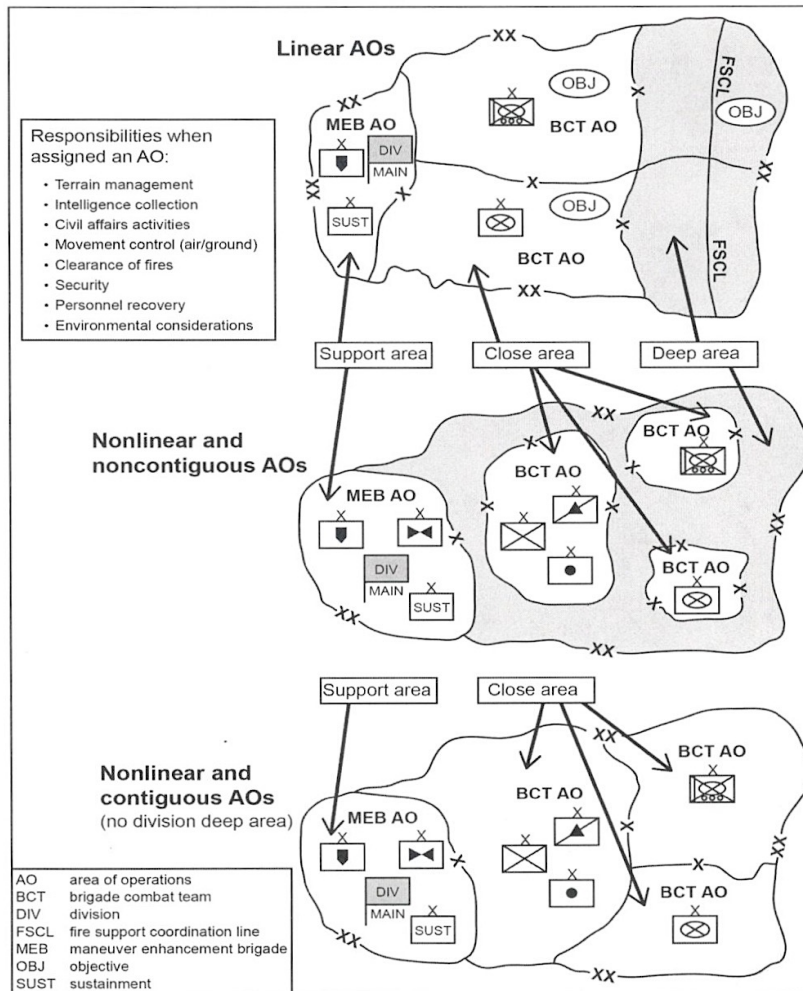


Figure 6. Nonlinear and noncontiguous / contiguous areas of operations (AOs). Army Doctrine Reference Publication (ADRP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2012), 1-10.

The way the US Army Doctrine Reference Publication (ADRP) 3-0 *Unified Land Operations* depicts noncontiguous area of operations (AOs) provides an example of the cognitive challenges that can arise from boundaries and their binary representations. The crux of the problem comes from the ill-defined ontologies of inclusion and exclusion in the different AOs.

Contextually, figure 6 creates a discourse on the operational framework of deep-close-security, based on three different categories of AOs. ADRP 3-0 is not prescriptive in using any of these frameworks, they are rather meant to help operational artists and leaders “clearly articulate

their concept of operations in time, space, purpose, and resources.”⁹⁶ This specific framework is generally considered for stability operations. This is because it makes it easier to conceptualize lines of effort where objectives are arrayed conceptually to achieve objectives mostly independent of maneuver in the physical space (lines of operations), or where there is no distinct forward edge of the battle area.

A critical weakness of this map is its inability to communicate political aims with purpose and meaning for the purposes of the operational art, here particularly on how to prioritize security activities in space. There are too many a-priori ontologies, intertwined and subjectively normalized, for it to create thorough and relevant meaning-making at the tactical level. The conceptualization is feasible, but not suitable to the full extent of the problem, nor is it acceptable for the commander’s understanding. Almost invariably, such maps lead to what amounts to some of the most important problem that military forces face in stability operations in the first place. Most notably, it fails to answer what “security” means in the operation, and how it is different through space. In this specific example, it blends the Brigade Combat Team (BCT) and Maneuver Enhancement Brigade (MEB) areas against shaded interstitial zones, intuitively suggesting but two different methods. In more generic terms, the problem of “security” is therefore too vague a concept to deduce ontologies from the map itself. There is a lack of precision, of clear nuances, where boundaries, implying binary representations, result in equally binary ontologies. The map presents more questions than answers, muddling through a problem in a way that its most important deductions, the aspect of security, cannot be understood less a substantial narrative be introduced, replacing the map almost altogether. Going back to figure 1, no relevant objective reality is externalized, objectified, and internalized, the map rather serving as a conduit to a further need for ontologies. This map is more conducive to questioning than cognitive discourse.

⁹⁶ ADP 5-0, 11.

There are multiple approaches to addressing the issue. The first is probably the most obvious, and is to avoid using this operational framework (deep – close – security) when dealing with stability operations requiring security over a wide area. However, noncontiguous battlefields still need conceptualization to impart the necessary understanding, as tactics are interested in their ontologies to understand the physical domain. A solution is therefore to exploit the ubiquitously binary nature of boundaries by moving from a discrete depiction towards a rather continuous one. In other words, multiple concentric shapes can show a progression in a certain data set, such as security task priorities for example, to even using a continuous progression based on physical distance or time alone (figure 6). One particular advantage of this method, therefore, is to increase the amount of nuances in the data. More importantly, as in the middle graphic, it can also be used to impart new fields of data to the progression, thus increasing the level of meaning-making as done previously, centering the cartographic discourse on the non-spatial information.

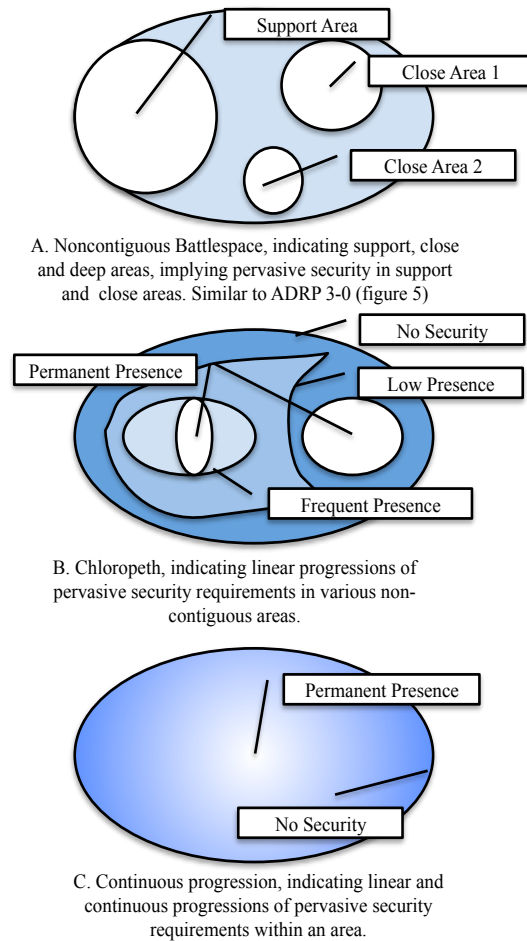


Figure 7. Noncontiguous battlespace (A), chloropeth (B), and continuous progression (C). Source: author.

There is a further limit to this approach. Continuous depictions linked with security responsibilities, as in the bottom diagram of figure 7, introduce further complexities and nuances to the problem that again muddles the cognitive discourse. Simply put, physical security relies on physical movement and maneuver, which occurs in relations to physical lines of communications and not abstract measures. Therefore, in addition to easily becoming visually overwhelming, such map is physically or temporally meaningless. In support of the operational art, cartographers therefore need to identify the just middle, which is a matter of interpretative abilities, but most often also of time available and thus depth of planning.

In any case, the particular advantages to such methods of depicting information go beyond the conceptualization required to understand how to effect security in noncontiguous battlefields.

Consider for example Herbst's argument in *States and Power in Africa*, where he contrasts the historical distribution of power for tribes and nations in Africa as having been concentric, as opposed to linear as in Europe, due to the extremely large and difficult terrain and the late development of transportation infrastructure.⁹⁷ In this case, the sort of mapping in figure 6 again gains in relevance, albeit necessary in increasing the understanding of a noncontiguous battlefield but that of geopolitics, for example. Collaboration with local politicians on local projects, to impart them legitimacy in an insurgency for example, could be conceptualized on a map as following suit to such a traditional radiance of power.

As the previous example illustrates, there are extensive requirements to visualize boundaries in support of the operations process. Boundaries create binaries and frame cognition. Map-makers can therefore leverage boundaries to assist in framing problems, but must be cognitional that over-framing leads to losses in the cognitive discourse, and negatively impacts the commander's understanding.

Section 4 – The Israeli-Palestinian conflict, a case study

This section explores from an experiential point of view the spatial ideologies linked with the Israeli-Palestinian conflict. It aims to put in additional context the theoretical and applicatory concepts of discursive maps explored so far. The central argument revolves around a distinctive tension between physical and metaphysical dimensions of social systems, formed of intangibles in identity and beliefs best described through narratives imbued with history, theology, and other cultural perspectives.

⁹⁷ Jeffrey Ira Herbst, *States And Power In Africa*, 1st ed. (Princeton, NJ: Princeton University Press, 2000), 91.

Jerusalem, center of the world

Walking in Old Jerusalem is not only walking through time, as the popular saying goes, but it is also an incursion into the complex identities that constitute much of the world. Social complexity radiates from individuals, rocks and symbols, as if meaning was as substantive as water, or fire. The prospect of linear thought here is a foreign concept, with the social system intuitively conceptualized as a dynamic—even at times iterative—interaction between the physical and the metaphysical. Hence reigns a local social anarchy, akin to that of states in the international system, where no one entity perhaps can rightfully claim and be granted sovereignty, at least not in the minds of all of its so diverse communities.

In this place, peace is a notion that seems to live in both dimensions. It also feels fabricated, as if tolerance is a virtue that needs periodic stirring to remain potent. Local dynamics thus permeate of attempts to constrain the social system. Walls, gates and guards loom both horizontally and vertically, as at the Temple Mount, and in doing so security has become epistemological of physical boundaries. In the metaphysical, discourses rage as much about exclusivity as they do of the inclusivity of each religion, in the latter case qualifying faith as one would of different brands of rice, and granting privileges of redemption, resurrection, or other, often only to the few.

Consequentially to such epistemological emergence, no enlightened individual can tread in Old Jerusalem without pondering over his or her own sense of self. In the reductive context of religion, even atheists are contrived into questioning the rationality of their beliefs systems and their values, if only from a historical or cultural perspective. Such reflection is at the local-level—the micro-narrative—what much of globalization is at the macro-level: a broken stream of cognizance that focuses on the differences rather than the wholes. In other words, it is natural—or normative—that in a place where discourses are so charged with meaning, individuals are more deliberately conscious of their own sense of self and how they fit in relation to their environment: their identity.

Applying this same logic to collective identities helps understand many greater phenomena, such as why starting after the 1967 War of Liberation, or “The Nakba” (Catastrophe) for Palestinian Arabs, the West Bank of the Jordan river is argued to have become more Palestinian than what it was before, and also more so than what lays at its East.⁹⁸ The differences in identity suggested or amplified by new boundaries and reinforced by polarized politics increased the contrasting meaning, or epistemological value, of what lied on the other side. Stronger identities emerged from stronger contradictions, and along these conflicting ideologies and territorial ambitions came violence. As Paul Virilio puts it: “the size of the battlefield, the length of frontlines count for nothing compared to the immediacy of the threat.”⁹⁹ This threat began by existing in the mind, but due to politics in a narrowed time and space, it increasingly came to instigate violence.

This example is but one of how Old Jerusalem, as its own microcosm, is closely related or even symptomatic to greater phenomena in Israel, the Middle East, and perhaps even the world. It is systemic emergence at its most tangible, where dynamics observed relatively easily at the micro-level of the system echo the behavior of macro-phenomena.¹⁰⁰ Therefore, military practitioners can gain a greater understanding of spatial ideologies in Israel and Palestine, or even the Middle East, by understanding Old Jerusalem itself. A key is of course cartographic depictions that represent in

⁹⁸ Daniel Pipes, "Is Jordan Palestine?," Blog, *Daniel Pipes Middle East Forum*, 2017, accessed February 14, 2017, [http://www.danielpipes.org/298/is-jordan-palestine.? 8](http://www.danielpipes.org/298/is-jordan-palestine.?).

⁹⁹ Kellner, 11.

¹⁰⁰ In their understanding of international relations, Robert Jervis, Antoine Bousquet and Simon Curtis define emerge as the study of the relationship between the micro and the macro of a system, analyzed through various scales. Robert Jervis, *System Effects*, 1st ed. (Princeton, NJ: Princeton University Press, 1997), 97. Antoine Bousquet and Simon Curtis, "Beyond Models And Metaphors: Complexity Theory, Systems Thinking And International Relations," *Cambridge Review of International Affairs* (2011): 55. Within the context of policy and tactics, Everett Dolman refers to it as “the movement from low-level rules to higher-level sophistication.” Dolman, *Pure Strategy* (London: Frank Cass, 2005), 114. Conversely, Jamshid Gharajedaghi simply states that “Emergent properties are the spontaneous outcome of ongoing processes.” Jamshid Gharajedaghi, *Systems Thinking, Managing Chaos And Complexity, A Platform For Designing Business Architecture*, 2nd ed. (Boston, MA: Butterworth-Heinemann, 1999), 47. All of these definitions are in relation to particular context, here international relations and business respectively. Within our current domain of applicability, a better definition of emergence remains the non-linear results of dynamic and novel interactions within a system, observed at the micro level and influencing macro phenomena.

discursive ways the tensions that lie at the intersections or overlaps of the various spatial ideologies (see Appendix A for contemporary maps of Jerusalem).

Another example, which unfortunately could not be copied for this work, is a heat map depicting with continuous progressions the religiousness of locations within Old Jerusalem as it pertains to Judaism and other historical notions of the Zionist movement. Particular Zionist groups use it to select and buy propriety for Jewish settlers within the whole of Old Jerusalem (not just the Jewish quarter). In essence the depictions are similar to what a thermal camera shows when looking at hot or cold air infiltrations in a house. Certain key areas of the maps are identified with a progressively darker shade of red as they gain meaning in the metaphysical dimension. For example, of course, the Western Wall (Wailing Wall) is bright red, but so is much of the rest of Temple Mount as it relates to what lay underground: the first and second temples. Other locations are also chosen for their historical value to Zionism, and not so much their religiousness, such as the Prime Minister's house, or the Lion's gate, the latter an extremely meaningful locale of the 1967 Six-Day War to Israeli soldiers.¹⁰¹

Interestingly, however, this map was not contrasted with the competing spatial ideologies and territorial ambitions of Muslims, Christians or other religious groups, at least not from a result of my inquiries. If indeed such contrasting is not being conducted, the rival perspectives are ignored to the obvious detriment of apt cartographic conceptualizations of the actual tensions in space, which would help assess risk for the Jewish settlers. Nevertheless, the ideas suggested by such a discursive cartography has immense value for improving spatial understanding for the rest of Israel and Palestine. For example, it can help quality the cognitive competition over the Cave of the Patriarch in Hebron, and assist in designing security and rights of access so tantamount of military operations. The idea of such heat map of religiousness is also very pertinent to conflicts in the rest of the world. For example, it could help understand spatial tensions between Shi'ite and Sunni in

¹⁰¹ "The Gates Of Jerusalem," *Israel-A-History-Of.Com*, last modified 2017, accessed March 20, 2017, <http://www.israel-a-history-of.com/gates-of-jerusalem.html#The%20Lions%20Gate>.

Iraq and the Levant, in ways akin to figure 5 but at a micro scale, thus helping military practitioners better devise politically-sensitive security or development solutions at all levels of governance.

Future state boundaries in the West Bank

Conceptualizations of the future state boundaries for Israel and Palestine in the West Bank also invariably contribute to diverging meanings of current boundaries: their epistemology. The tensions these create are sometimes as palpable as a knife entering one's body, to use a dark metaphor of what Palestinian terrorist ideologies make of it.¹⁰² But even more significant to the problem are the diverging conceptualizations brought about by other competing and conflicting narratives. As John Newman explains, "it is through narrativity that people come to know, understand and make sense of the social world, and it is through narratives that they constitute social identities."¹⁰³

Some of the most common narratives used to lead to statehood claims relate to history. Often perceived as universal and unbiased, of course wrongly because narratives can mutate them into various forms of appeal, the history of the peoples of Israel and Palestine relate to ancient pasts. They are also not dissociable from Judaism, Christianity and Islam. Consequently, they are extremely profound, meaningful, and thus in one way or another reinforce the core identity of most residents, which when politicized have lead to diverging spatial ideologies and territorial ambitions throughout the ages. These ambitions, and their manifestations through violence, have further

¹⁰² Although it exceeds the scope of this work, it can be argued that Israel has made security its paramount consideration towards any solution the territorial contest of the West Bank. Shlomo Gazit, *Trapped Fools; Thirty Years Of Israeli Policy In The Territories*, 1st ed. (London: Crown House, 2003). The security wall is a tangible manifestation of such concern, but the greater cause is an outgrowth from the intense terrorist activities during and after the two Intifada's, and in a two-state solution would continue to exist in the form of foreign influence coming from Jordan from across the future border. Hence Israel, as a small state with strong military presence at the highest echelon of governance when compared to the United States, tends to see problems with the question of "Where to apply force and how," as opposed to other solutions such as "Who's problem is it?" In the latter case, the security apparatus may very well be of a similar manifestation in physical space, but it would reframe the issues along with a more durable solution of autonomous states, with greater considerations for Palestinian autonomy in security, education and infrastructure.

¹⁰³ Newman, 75.

reinforced the historical narratives, most notably in the near endless persecution of Jews that culminated in the Holocaust.¹⁰⁴ This approach to the construction of individual identities in Israel and Palestine reinforces the model in figure 2.

The boundaries that depict these realities are therefore quite complex and meaningful in themselves. However, they are also competing with many other conceptualizations of space, each with their own legitimizations.¹⁰⁵ In a first instance, there are those of internationally recognized bodies, as those of the United Nations (UN). Their preferences are that of future states with continuous areas and majority demographics, as much as possible, as this most corresponds to their own realities. In some areas of Israel and Palestine, such future boundary is seen as the security wall, as in Jerusalem East, thanks perhaps to Israel's effort to shape it in such way. In most places however it is the Armistice line of 1949. In any case, the Oslo Accords act as the foundation to formalize their perspective, but the primarily deontological biases that drive their perspectives are very much external to the actual conflict as it is perceived in the West Bank, both in time and in space. (see Appendix A for a map for the Oslo Accord around Jerusalem).

In a second instance, academics like Juval Portugali and many public administrators of Israel and Palestine have argued that it is infrastructure that better defines the true imperatives, or indeed needs, of future state boundaries in the West Bank.¹⁰⁶ This is a rather utilitarian approach to the conflict when compared to that of the UN, and supports the thesis proposed by Parag Khanna in

¹⁰⁴ It is acknowledged that the Holocaust had roots beyond territorial ambitions, most particularly in ethnological ideas, but it also contributed to reinforce other narratives on the need of territorial sovereignty for Jews in the State of Israel.

¹⁰⁵ Many of the perspectives expressed in this section were obtained during a series of interviews conducted in Israel in February and March 2017 with academics, military leaders, and civil servants to the municipality of Jerusalem. LTG Rudesheim, US Army, "Boundaries, Security, and the Two-State Solution," interview by Mathieu Primeau, in person (United States Security Cooperation (USSC) Mission, Jerusalem, Israel, 2017). COL Tal Braun, IDF, "Zionism, Judaism, and the Boundaries of Israel," interviewed by Mathieu Primeau, in person (Gush Etzion, Israel/Palestine (Judea), 2017). Dr. Ofra Graider, Operational Theory Research Institute (OTRI), interviewed by Mathieu Primeau, in person (Tel-Aviv, Israel, 2017). Col Terrence Leigh, Canadian Armed Forces (CAF), "The IDF and Design for Territorial Sovereignty," interview by Mathieu Primeau, in person, (Tel-Aviv, Israel, 2017).

¹⁰⁶ Juval Portugali, *Geography, Environment And Cognition*, 1st ed. (Oxford: Pergamon Press, 1992), 23.

Connectography, and which is philosophically representative of the “striated spaces” defined by postmodernists Gilles Deleuze and Félix Guattari.¹⁰⁷ While the philosophical ideas are abstract, reality on the ground in the West Bank is very tangible despite its complexity. In one instance, for example, sewage from Jewish communities on top of hills in Judea flows untreated downhill in Arab communities of Bethleem. Of this problem, the Palestinian build narratives of unfair and unsanitary treatment from who they define as the occupier; the State of Israel. Conversely, the Zionist Jews living on top of the hills point out that sewage works with gravity, and thus it is not only pragmatic but inevitable to build any sewage treatment plant down in the valley, in or very closely to Bethlehem itself. Most likely due to a lack of finances, poor urban planning (particularly in Palestine), lack of dual use land, and for other political reasons, the problem gains in meaning from conflicting narratives that can only disappear if sewage is treated suitably, both from the perspective of Zionist communities and the Palestinians in Bethlehem. In effect, therefore, this sewage problem creates a further boundary that overlaps zones A and C of the Oslo Accord, respectively Palestinian and Israel territories. It is extremely reductionist that such infrastructure-related boundary be ignored or subsumed by those of the Oslo accord, to name but one other legitimization.

A further boundary created by infrastructure concerns roads. In Jerusalem East for example, improvements in roads linking Arab communities, here considered part of Israel and in zone C, have contributed to changing what Israel considers troublesome characteristics of Arab demographics in Jerusalem. According to the Jerusalem Institute for Israel Studies, Arab women have increasingly started working, which has been demonstrated to increase their families quality of life, improve access to education for their children, and so on, while also reducing their birth rates

¹⁰⁷ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, 1st ed. (Minneapolis: University of Minnesota Press, 1987), 526-532.

significantly.¹⁰⁸ Hence this plays in many narratives, not only for Palestinian Arabs who desire such improvement within their society, but also for Israel's concerns of maintaining a Jewish majority within their territory, and avoiding libels of "apartheid" in the UN or world media.¹⁰⁹

Teachings to the operational artist

If there is one thing the perspectives of the Israeli-Palestinian conflict therefore propose is that operational artists cannot take conceptualizations of space as a trifle, not only in Israel and Palestine but by emergence and analogy elsewhere as well. The tensions between boundaries, interlocking and overlapping, are malleable in military interventions. Politics are the decisive point, as that ruse that conquers the heart of men and women for the power of the few.¹¹⁰ In the context of the Israeli-Palestinian conflict, even this idea remains an over-generalization of simpler truths. What animates violence in this contested space starts with what people think they are, in relation to their immediate environment as it socialized to them, and where they feel a belonging: their spatial ideology.

Hence considerations for boundaries belong at the center of meaningful cartographic discourses. All contiguous and continuous spaces of maps, or areas, carry the meanings of the boundaries that border them. But as discussed, from the necessity of cartographic generalizations, or synthesis of data, these areas are invariably reductionist in nature. This implies that the operational artist must be critical of such depictions of space on maps for what they omit as well as what they represent. He or she must see what space means to individuals in both dimensions, the

¹⁰⁸ Maya Choshen, Michal Korach and Dafna Shemer, *Jerusalem Facts and Trends*, (Jerusalem: The Jerusalem Institute for Policy Research, 1996), 7. Also explained by Israel Kimhi, "The Demographics Of Jerusalem and its Historical Boundaries," interview by Mathieu Primeau, in person (Jerusalem Institute for Israel Studies, Jerusalem, Israel, 2017).

¹⁰⁹ Times of Israel, "Israel Fumes As UN Board Slams Its 'Apartheid, Racial Domination' Over Palestinians," Mar 15 2017, accessed March 20, 2017, <http://www.timesofisrael.com/israel-fumes-as-un-board-censures-apartheid-and-racial-domination/>.

¹¹⁰ The term "decisive point" is used here to represent a critical pressure point within the system that when acting upon contributes to create desired feedback.

physical and the metaphysical, just like Temple Mount is meaningful to Jews, Arabs, Christians, Muslims, and through systems effect such as emergence is also ultimately meaningful and impactful to much of the rest of the world. The cartographic discourse, politicized, decisive, is therefore a critical enabler to conflict resolution in contested spaces.

Moreover, the operational artist needs to be reminded that violence in the Israeli-Palestinian conflict did not start simply, meaning from a linear and closed cause-and-effect relationship, for example from the anguish of Palestinian sons of orange farmers who lost their land in 1967. It is much more complex and systemic. The social system is by nature open, international, yet the enmity is local. Consequentially, the solution cannot be purely external. Accordingly, the narratives explored posit that the solution in this case needs little of the opinion of internationally legitimate bodies like the UN and much of critical joint-serving infrastructure. Military conceptualizations of space must follow suit, for this conflict and by analogy to other contested spaces.

Section 5 – Conclusion and recommendations

This work explored discursive maps as they relate to the operational art, leveraging primarily knowledge from systems thinking, postmodernism and geopolitics. In a first theoretical portion, it has described how space and identity are cognitively inseparable from each other, proposing a model where politics are a decisive point to effect desired feedback within the social system. In the applicatory section, this work has proposed tangible areas of improvement in the maps created by operational artists, for operational planning. Studying the Israeli-Palestinian conflict, this work has combined together theory and applications for discursive maps in a contemporary context, providing further clarity and understanding on the insights they offer. Of this inquisitive process, a series of critical observations are worth mentioning as a conclusive remark.

A framing error operational artist often fall prey to is to conceive boundaries as almost exclusively physical, or ontological. To them they are lines on maps, borders, or even physical walls like around Old Jerusalem. The boundary becomes the territory. Since they are seen as the

result of a binary equation where what is on one side is not what is on the other, any adjustment is a best-fit measure.

This perspective neglects the complexity of identities in function of the environment, and the paramount influence that politics has on them. As this paper presented, notions of identity and space are not dissociable, and when politicized lead to spatial ideologies and territorial ambitions that spawn violence. Politics, as the cause for violence and not its symptom, can thus act to reinforce or reduce the dichotomy presented by the boundaries that exist, physically and metaphysically, and in such way alter systemically the likeliness of further violence. As Mary Kaldor puts it: "overcoming fear and hostility does not necessarily come about through compromise, even if that is possible, because compromise can entrench exclusivist positions; rather it requires a different kind of politics, the construction of a shared discourse that has to underpin any legal response."¹¹¹ Such shared discourse starts with understanding spatial ideologies.

In order to achieve this, the key conceptual approach for the operational artist is to remain critical of continuous depictions of space on maps by questioning the meaning of the boundaries that define them. Answer to this question must then transpire in the realm of the new cartographic representations that inform the discourse. There are therefore no definite lists of principles or other simple and linear solutions to developing cartographic habits that create such desired discourses. What emerges is rather the need for the mapmaker to constantly ask of the meaning created and carried by the iconographies of his or her maps. Yet meaning is not just based on how perceptive the mapper is of the social systems involved in the discourse, nor his or her understanding of the data that begs for analysis and synthesis in the creation of a map. Meaning is also a function of the communicative potential of the cartographic methods used.

Of all such methods the one warranting the most consideration pertains to how cartographic scales and reference systems frame, as design aims to do, an intended discourse. The first, scales,

¹¹¹ Kaldor, 7.

deals with the optimal combination of the detailed and the conceptual through analysis and synthesis. In understanding the problem, analysis dominates; in visualizing and aiming towards action, synthesis reigns supreme. Thus both are as necessary to each other as strategy informs tactics, and vice-versa. What is broken into coherence and relevance by the discursive map is the tension between the two.

In the second instance, reference systems allow to redefine the leading variables of the discourse, focusing not just more clearly on certain chosen parameters, but allowing these parameters to potentially be as inclusive to time, space, and purpose: the key variables of the operational art. In this context the map therefore most aptly serves as an integrative tool to mission variables.

This work started in defining any and all military operational artists as mappers and also ends as such. This is because the models, perspectives, and skills that lead to the creation of maps relevant to understanding complex problems and planning military operations are as pertinent to operational design as they are to their associated cartographies. To study one is to study the other. Maps, as do military operations, exist as tools of particular meanings; not in the abstract. Hence despite the worst humanity can bring to bear on prospects of peace, discursive maps lead away from the edge of chaos.

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Appendix A

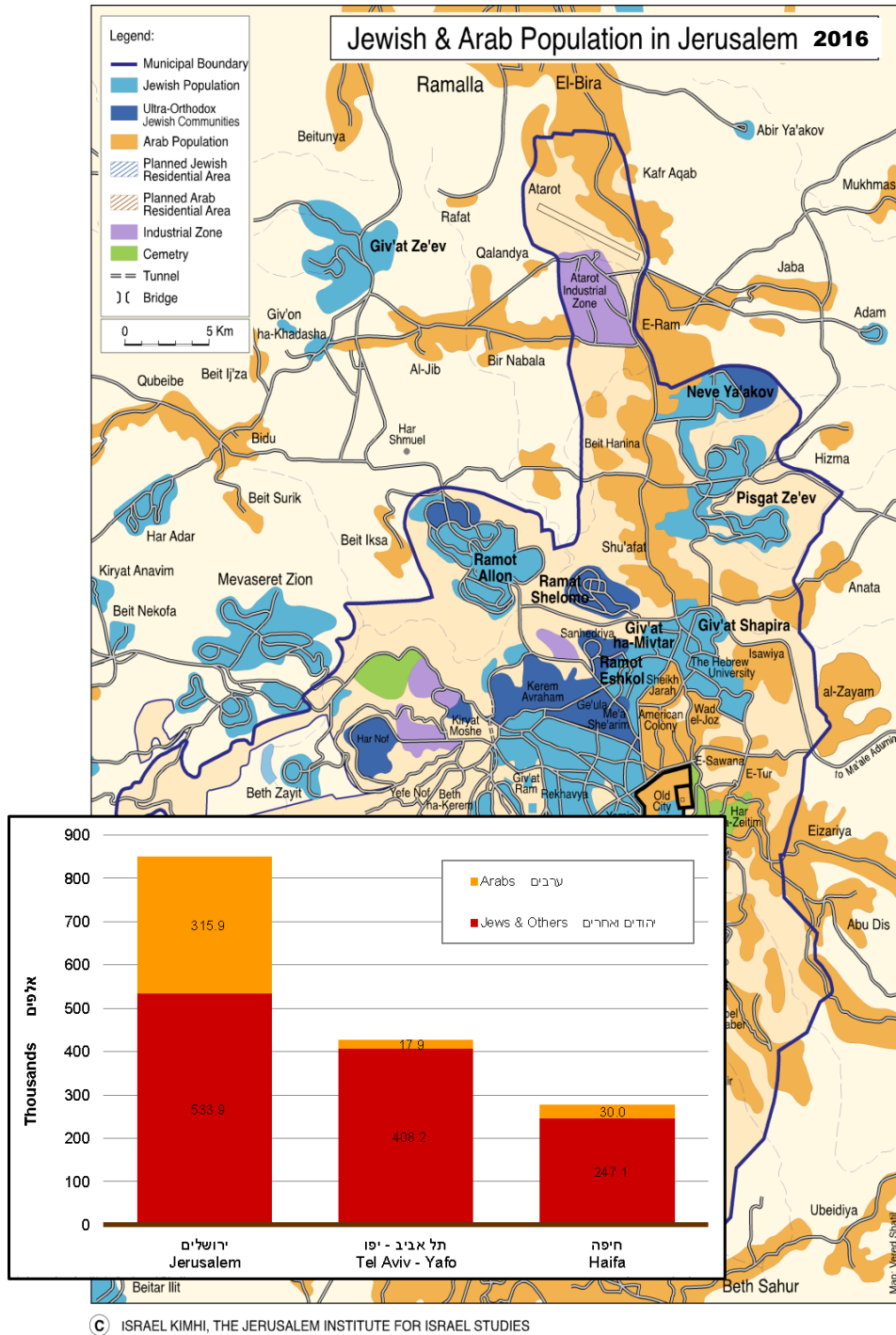


Figure 8. Jewish and Arab Population in Jerusalem in 2016. Copied with Permission. Israel Kimhi, (Jerusalem: The Jerusalem Institute for Israel Studies, 2017).

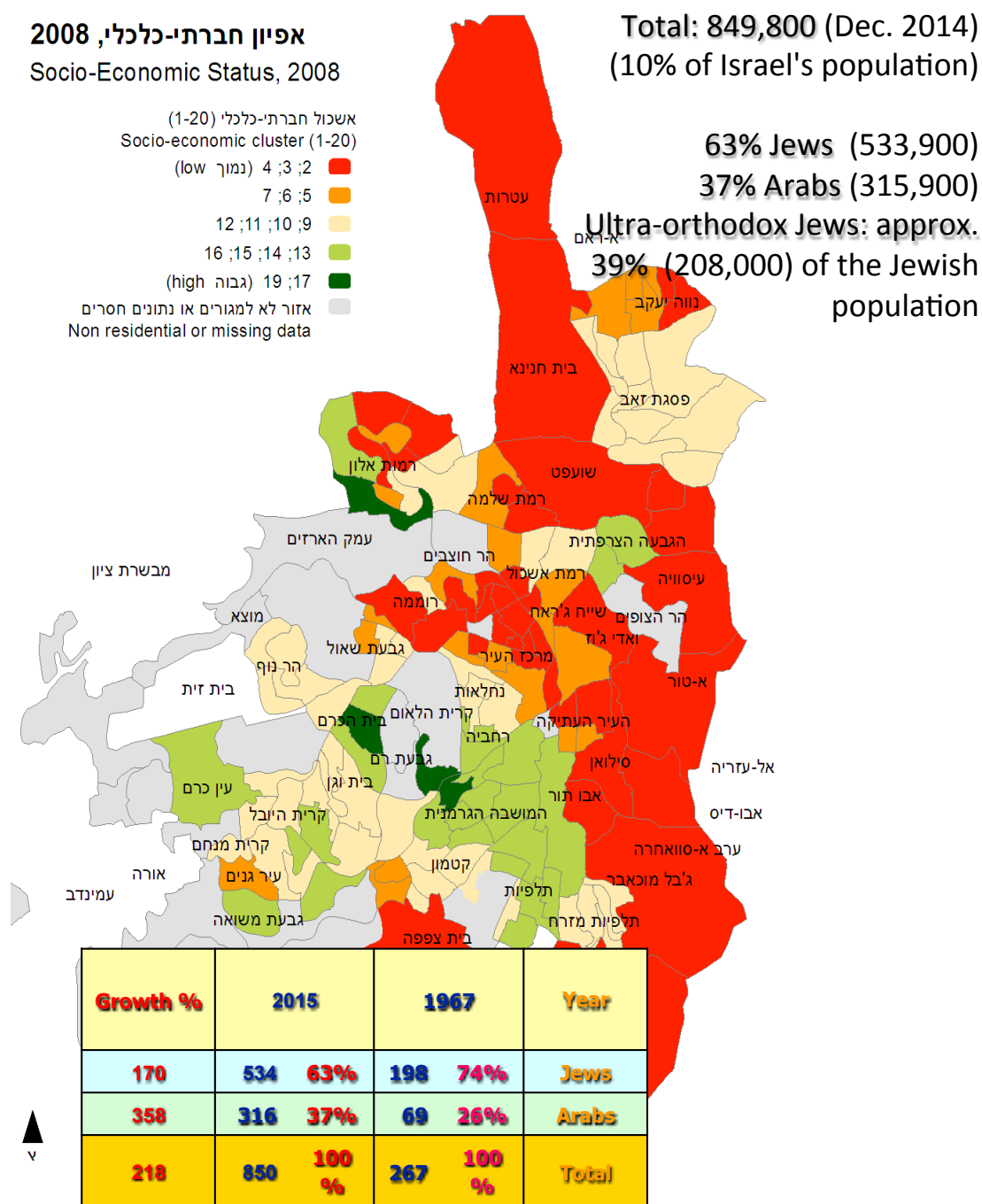


Figure 9. Socio-Economic Status of Jews and Arabs in Jerusalem in 2008. Copied with Permission. Israel Kimhi, (Jerusalem: The Jerusalem Institute for Israel Studies, 2017).

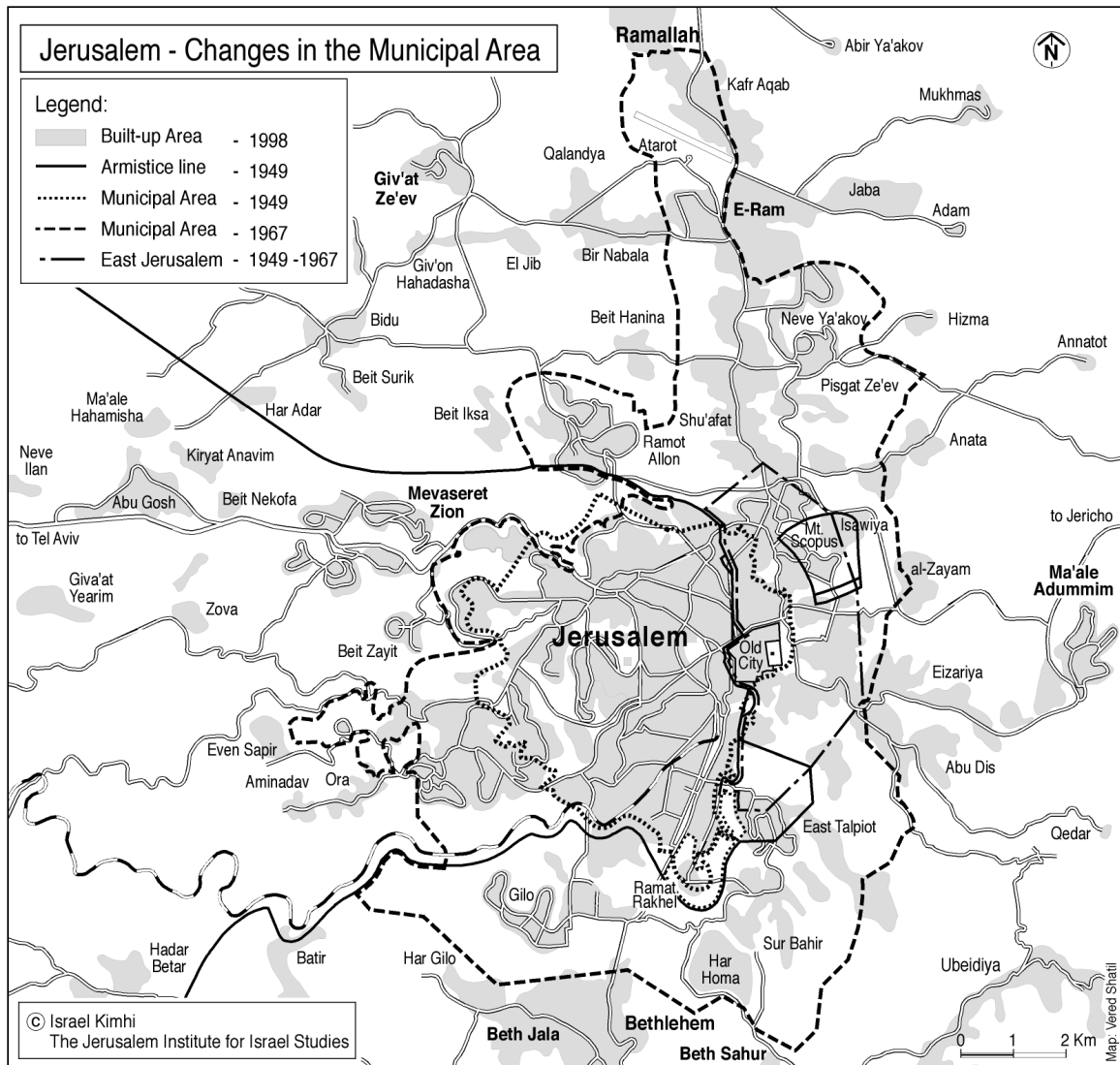


Figure 10. Changes in the Municipal Area of Jerusalem between 1949 and 1998. Copied with Permission. Israel Kimhi, (Jerusalem: The Jerusalem Institute for Israel Studies, 2017).

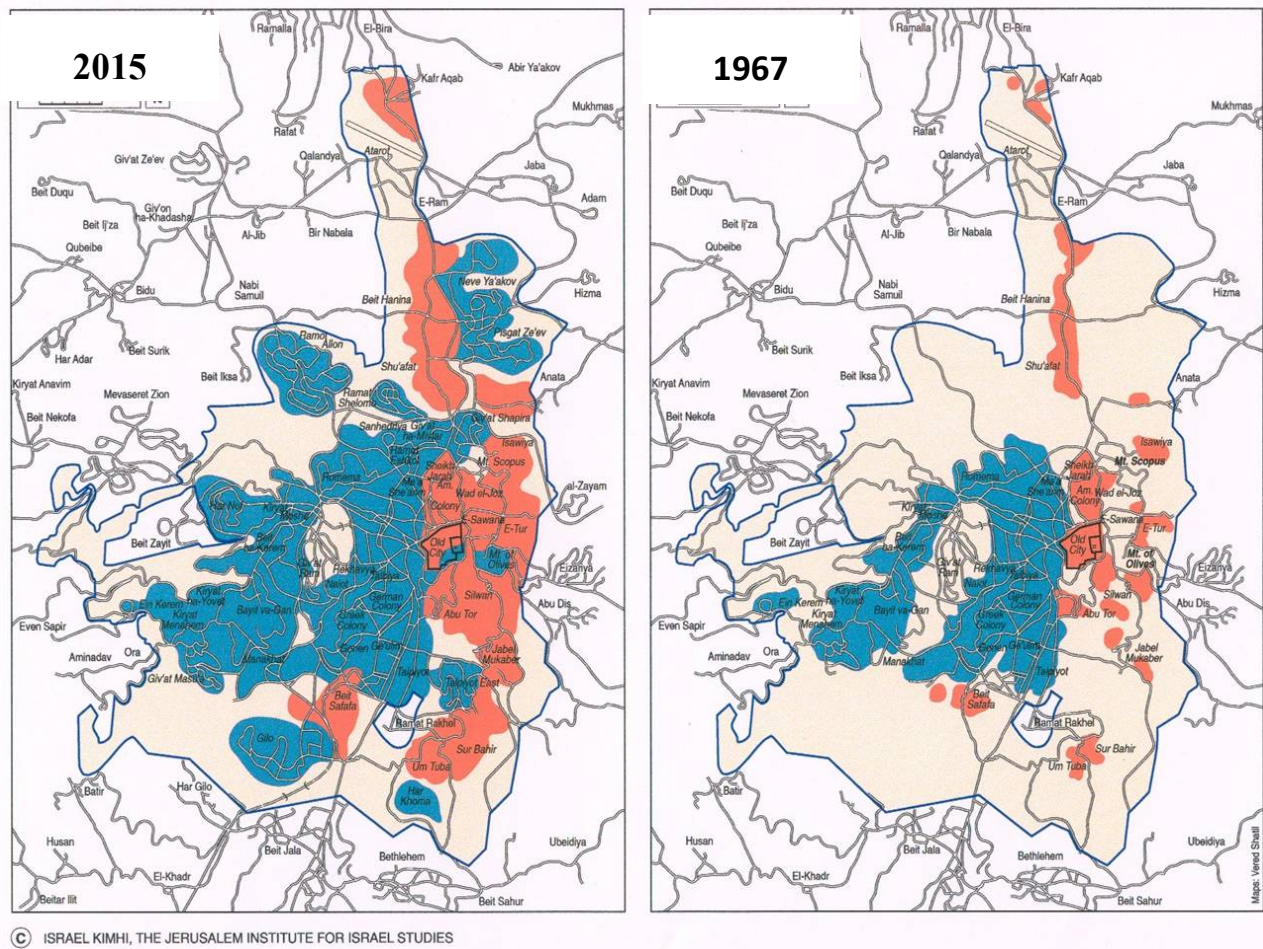


Figure 11. Map of the Growth of Jewish (blue) and Arab (red) Urban Areas between 1967 (right) and 2015 (left). Copied with Permission. Israel Kimhi, (Jerusalem: The Jerusalem Institute for Israel Studies, 2017).