Navigating the Cognitive Dimension with A Different Compass

A Monograph

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The road to better understanding one's operational environment travels through the cognitive dimension, where different individuals' thoughts and beliefs shape their unique interpretations of space and its meaning. Elements of psychology, philosophy, history, theory, and doctrine merge to present the complex nature of cognition and the processes of thought. Individuals interpret time and elements of physical space, such as borders, differently. This creates differences in thought, action, belief, and strategy that become realized as fog and friction in an operational environment.

The Israel border illustrates how different thought processes result in different understandings of space and generates conflict. These differences manifest in misunderstanding at best, and fundamental surprise and strategic miscalculations at worst. A synthetic understanding of multiple perspectives is needed to create a more complete understanding and visualization of the space resulting in a comprehensive operational approach. In the lands of Israel, where multiple perspectives collide in a complex conflict, an appreciation of these unique perspectives is needed to gain an understanding of the situation.

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Abstract

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The road to better understanding one's operational environment travels through the cognitive dimension, where different individuals' thoughts and beliefs shape their unique interpretations of space and its meaning. Elements of psychology, philosophy, history, theory, and doctrine merge to present the complex nature of cognition and the processes of thought. Individuals interpret time and elements of physical space, such as borders, differently. This creates differences in thought, action, belief, and strategy that become realized as fog and friction in an operational environment.

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Introduction

In the whole range of human activities, war most closely resembles a game of cards.

—Carl von Clausewitz, *On War*

War is a complex human interaction, a game of cards to continue Clausewitz's metaphor, in which military commanders from different backgrounds face off against one another. The table is set and the cards are dealt, but the matter of who wins the game is decided by more than the cards in each player's hand. Clausewitz used this metaphor to illustrate the presence of chance in war, but it is also a useful metaphor to illustrate the cognitive aspects of war.[1] A US commander is seated across the table from the enemy commander, each holding his cards and an emotionless stare mentally preparing for the battle to begin. Presumably, the US commander will have been dealt the stronger hand with his superior military capability and robust industrial complex in support. But in a game of cards, the winner is not the player with the best hand. There is a mental aspect to this game, giving the game depth beyond the cards each player holds close to his chest. This mental aspect determines how he will play his cards and the strategy to which he approaches the game.

A good poker player knows that one does not play his hand, he plays the person across from him. To defeat his opponent in this game, he must understand his opponent to be able to outplay him. What is his opponent's strategy and how does he understand the game? How is it different from his own understanding? This metaphor illustrates a similar necessity in war. In war, a commander cannot play his hand, he must play his enemy across from him. This requires

[1] Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 85-86.

an endeavor into the cognitive dimension to understand the way the enemy thinks.[2] If a commander understands how his enemy thinks, he can anticipate the action, logic, and strategy of his opponent. If he plays his opponent, and not the cards the enemy is holding, he is more likely to be successful in his own effort. A failure to understand enemy strategy and perspective may produce a less desirable result realized as fundamental surprise. Specifically, this surprise is when the enemy or the population acts in a manner that was not forecasted – in other words, poor assumptions about other actors were made. This is not a new concept, but the current emphasis on capabilities-based planning has concealed this problem which resides in the nature of war. But what concrete steps may be taken in order to better understand the cognitive construction of one's enemy? The answer to this question requires an exploration of the cognitive dimension of warfare and strategy.

People think differently. Historical context, social norms and values, and personal experiences all shape the way people interpret the world and their place in it – these influences shape their individual cognitive processes, to include how they organize themselves and how they act.[3] This all occurs without much consideration from the individual himself, as one does not generally have any conscious awareness of these processes.[4] This unawareness contributes to a

[2] The US Army presents the cognitive dimension as one of three parts of the Information Domain on the Multi-Domain Extended Battlefield. The cognitive dimension relates "to people and how they behave," including "perspectives and decision making." This paper will further explore cognition, which is complementary to the understanding of the cognitive dimension as defined by the US Army. US Department of the Army, *Field Manual (FM) 3-0, Operations* (Washington DC: Government Printing Office, 2017), 1-6 - 1-7, 1-26 - 1-27.

[3] The US Army defines cognition in ATP 5-01.3 as "thinking—it is the mental process of knowing that includes awareness, perception, reasoning, and intuition." The American Psychological Association similarly defines cognition as "processes of knowing, including attending, remembering, and reasoning; also the content of the processes, such as concepts and memories." Simply put, cognition is the mental activity that occurs in an individual's mind during his experiences in reality. US Department of the Army, *Army Techniques Publication (ATP) 5-01.3, Army Design Methodology* (Washington DC: Government Printing Office, 2015), 1-6. American Psychological Association, "Glossary of Psychological Terms," last modified 12 December 2017, accessed 12 December, 2017. http://www.apa.org/research/action/glossary.aspx?tab=3.

[4] Richards J. Heuer Jr., *Psychology of Intelligence Analysis* (New York: Nova Science Publishers, Inc., 2006), 1.

cognitive blindness to other perspectives that may result in conflicts over different interpretations and meaning. To understand the elements of warfare and strategy in the cognitive dimension, one must journey to examine his own thought processes and strive to appreciate the differences in thought that reside in other actors.

The study of psychology, philosophy, history, and doctrine merge to reveal the implicit cognitive process behind differences in thought. This quest will include works in these disciplines to explore the depths of mental aspects between different people giving contrasted meanings and interpretations of this world. To begin the quest, one must understand the nature of thought processes to better understanding in the cognitive dimension. Philosopher Francois Jullien explains the need for this understanding, driven by "that which prompts us to ask…questions. It is this realm that we are not capable of questioning, namely the fabric of our thought that is…informed by the implicit categorizations of speculative reason, and oriented by a characteristic aspiration toward 'truth.'"[5] In other words, an individual's cognition - his understanding and beliefs, and the assumptions on which they are based - produces an unconscious and subjective, but deep perception of this world.

While there may be an objective reality, with empirically provable aspects, individuals interpret the world through a subjective lens known as a paradigm, and they begin to apply meaning. This interpretation is constructed by a series of simplified mental models that enable a person to quickly comprehend the complexities of this world. A person's experience, culture, values, and norms form these mental models, creating inescapable differences in the cognitive processes between individuals of different backgrounds.[6] The differences that exist in the cognitive dimension result in different interpretations of the meaning of space.

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[5] Francois Jullien, *The Propensity of Things: Toward a History of Efficacy in China*, trans. Janet Lloyd (New York: Zone Books, 1995), 18.

[6] Heuer Jr., 2-4, 66.

Maps are a tool to help an individual interpret and visualize space, but they only represent physical aspects of the space, not the meaning of the space. There are three types of maps with different purposes, each presenting space differently: political maps, military maps, and cognitive maps. Each of these three maps serve different functions that contribute to an understanding of space. Political maps present the world in a relatively orderly appearance, with borders that reflect the post-Westphalian international order. The identity of states, demarcation of sovereignty, and this contribution to national identity are important, but there is more to the space. Military maps are functional representations of physical realities which present commanders with a depiction of the terrain to inform understanding of military operations within an operational environment. Military maps aid a commander with scientific aspects of warfare, but they cannot depict the meaning of the space to participants of the conflict. The significant meaning within a space that resides in the cognitive dimension must be examined on a cognitive map. Cognitive maps reflect historical, social, contextual, and ideological interpretations of spaces that give it meaning and significance. Moreover, because different actors interpret the world differently, their cognitive maps are dissimilar. Different perceptions on the meaning of space, and the role that different maps play in improving understanding, leads to action and ultimately conflict by interested actors.

When navigating a space, a compass provides a useful companion to a map. A person navigates this world with a cognitive compass, which directs thought and action according to a set of beliefs and mental models formed over a lifetime. This compass is constructed by one's paradigm; it guides action and behavior through a subjective interpretation of the world. This compass provides direction to a person to navigate through life, cognitively mapping the world around it, using knowledge that has formed over time through experience and learning.[7] The

[7] Antonio Damasio, *Self Comes to Mind: Constructing the Conscious Brain* (New York: Pantheon Books, 2010), 18.

cognitive compass is what directs a person's cognition; it directs their knowledge, memory, reasoning, thoughts and beliefs, and ultimately directs their behavior, actions, and decisions. An individual's cognitive compass guides him through life. The direction provided is helpful, but each person's compass provides a different azimuth to negotiate the events relative to another. This contrast in azimuth may vary from slight to immense. The former manifests as minor misunderstandings between people, the latter may result is catastrophic miscalculation.

When different perceptions of space collide, tensions they create can produce conflict and war. Inherent differences in the paradigms of different people have contributed to multiple examples of such conflict. Although there is no state border surrounding Kurdistan, the place and the idea of Kurdistan certainly exists in the minds of Kurdish nationals.[8] It exists within the state borders of Iraq, Iran, Turkey, and Syria. Despite a history of violent and oppressive actions to force Kurds to conform to another state, the aim of self-governance remains a driving force for the Kurdish nation.[9] China and Japan, among many other actors, reflect different beliefs about borders and ownership of the South China Sea. This disagreement over sovereignty of space is rooted in different perceptions of the meaning and importance of that space. In cases like these, where different perceptions of space reside, conflict emerges.

The emergence of conflict as a result of different perceptions of space is well illustrated in the case of modern day Israel. A series of political decisions, multiple military campaigns, and diverse groups of people with different understandings of the space combine to create an intricate web of borders and meaning overlaid on Israel that resides in the cognitive dimension. Multiple different types of maps, created over this space over many decades, present the complexity of identity in this space. Jews and Arabs, Israelis and Palestinians, Western powers and Arab

[8] Karen Culcasi, "Locating Kurdistan: Contextualizing the Region's Ambiguous Boundaries," in *Borderlines and Borderlands: Political Oddities at the Edge of the Nation-State*, ed. Alexander C. Diener and Joshua Hagen (Lanham, MD: Rowman & Littlefield Publishers, Inc., 2010), 119.

[9] Ibid., 113-15; Peter W. Galbraith, *The End of Iraq: How American Incompetence Created a War Without End* (New York: Simon & Schuster, 2006), 150.

neighbors, among other groups contribute multiple different perspectives on the borders of Israel. A case study of Israel will explore these nuances to offer an appreciation of how multiple different perceptions unfold as conflict and war in a given space and the importance of recognizing them to understand the dynamic they create for planners to consider. This case reveals where there are implications for developing strategy, anticipating conflict, and generating the understanding needed for conflict resolution.

Examining the thoughts and beliefs of a culture of people, and the historical context of that physical space which contributed to its meaning, reveals a new understanding of multiple paradigms beyond the limited scope of a western-commander's mental model. The western worldview is legitimate but it is insufficient on its own. It is problematic that the cognitive approach used by US commanders practicing operational art is limited to a single, western lens which is used to interpret physical space. Instead, it is essential to develop a synthetic understanding of multiple paradigms to understand the various interpretations of space in the US Army's future operating environments. A synthetic understanding of multiple paradigms in a space enables a commander to develop a better plan. This synthetic understanding better informs the plan with an accurate source of conflict, understanding of the enemy and the other actors in the space, and true contextual realities that may be exploited to achieve success. The commander is enabled to develop a practical plan consisting of relevant actions that are better able to achieve a sustainable end state through a more informed understanding of the operational environment.

Exploring the Cognitive Dimension

Operational art is "the cognitive approach by commanders and staffs–supported by their skill, knowledge, experience, creativity, and judgment– to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, and means."[10] Cultural, social, and historical factors underpin this cognitive approach due to thought processes and the way an individual develops knowledge and beliefs. Differences amongst these factors that underpin cognition then lead to differences in the manner in which individuals would exercise operational art – their cognitive approach is different. To understand these differences, one must understand how thought functions and how it leads individuals to take a different approach.

Paradigms Give Meaning to Space

The cognitive dimension is comprised of many individuals' minds experiencing the same reality, but perceiving it differently. Although one human mind functions similarly to another, thought is highly influenced by external factors that ultimately lead to different worldviews. This section will build the process of thought that gives birth to the cognitive dimension. Thought is the basic element of mental activity. Clusters of thoughts become mental models that an individual uses to function in life. The collection of mental models and thoughts forms the individual's paradigm that he uses to perceive and give meaning to reality. His cognitive approach to life is constructed with thoughts.

What is thought? The term 'thought' is a nebulous term and one can describe it in multiple ways. Author and philosopher John Dewey expresses thought in terms of three distinct descriptions, each of which is pertinent here. First, Dewey says thought is mental activity, or everything that is "in our heads or that goes through our minds."[11] Then, adding more specificity

[10] US Department of Defense Joint Staff, *Joint Publication (JP) 3-0, Joint Operations* (Washington DC: Government Printing Office, 2011), xii.

[11] John Dewey, *How We Think* (Amherst, NY: Prometheus Books, 1991), 1-6.

he states that thought is "usually restricted to matters not directly perceived" with the five senses.[12] In other words, thought adds a greater sense to something beyond what one can perceive with sight, sound, smell, taste, or touch. It can be reasoned, then, that thought cannot be detected by those same five senses; thought is an element difficult to identify. Finally, Dewey connects thought and belief, where an individual's reflection on such beliefs results in a person continuing to think in a certain way based on those beliefs.[13] Thought leads to belief, and creates meaning for an individual interpreting the world beyond the five senses. This recurring mental activity of thinking, knowing, and believing is one's cognition.

Cognition includes many internal functions of the mind, including perception, imagery, problem solving, and thinking.[14] When an individual perceives an object, he does so with a mental interpretation beyond his five senses; psychologist Ulric Neisser refers to this as a "cognitive structure."[15] Neisser describes the forming of a cognitive structure: "when we first perceive or imagine something, the process of construction is not limited to the object itself. We generally build (or rebuild) a spatial, temporal, and conceptual framework as well."[16] Philosopher Joseph Dietzgen agrees, saying that "we become aware of all things in a twofold manner…outside in reality and inside in thought, in conception."[17] Aside from the physical structure, individuals build a separate understanding of physical objects in their minds. This understanding by using the mind, in addition to the five senses, gives meaning to objects.

Thought is most useful to its primary purpose, which is to provide a sense of what is real. The understanding takes place as an internal subjective process, providing the ability to function

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[12] Dewey, 1-6.

[13] Ibid.

[14] Ulric Neisser, *Cognitive Psychology* (New York: Psychology Press, 2014), 4.

[15] Ibid., 271.

[16] Ibid.

[17] Joseph Dietzgen, *The Nature of Human Brain Work: An Introduction to Dialectics* (Oakland, CA: PM Press, 2010), 20.

in life.[18] According to Dewey, understanding implies a form of belief based on "real or supposed knowledge going beyond what is directly present…Such thoughts grow up unconsciously and…insinuate themselves into acceptance and become unconsciously a part of our mental furniture."[19] Without much, if any, realization, a person continues this process, which further engrains understanding and beliefs in their mind. There becomes little distinction between the objective world and the subjective process that generates the understanding and beliefs of that world.

Thinking is sense-making. As an individual exercises thought, he is making sense of the situation beyond what he can perceive with his senses. Authors Tania Zittoun and Svend Brinkmann refer to this process as "learning as meaning making," where "people are actively engaged in making sense of the situation – the frame, object, relationships – drawing on their history of similar situations and on available cultural resources."[20] They offer a useful example of this concept that describes the many differences that can be interpreted from the same action based on the context. The wink of an eye can hold a wide range of meaning. Depending on the context, a wink can have a flirtatious meaning or be a signal of conspiracy. The physical properties of the wink have not changed; the movement of the eye provides little meaning behind the wink. To understand the meaning of the wink, an individual recalls their experience in similar situations as well as their previous knowledge and understanding.[21] Using this example, individuals interpret everything using mental models in order to determine its meaning. Over time, cognitive structures and meaning accrue in one's mind, giving subjective meaning to reality.

[18] Dietzgen, 18.

[19] Dewey, 4.

[20] Tania Zittoun and Svend Brinkmann, "Learning as Meaning Making," *Encyclopedia of the Sciences of Learning* (2012): 1809.

[21] Ibid.

An individual continues to build beliefs and develop an evolving interpretation of reality. Over time, the mind groups these beliefs into quick frames of understanding known as mental models, which are used for quick interpretations of reality. Here is where one's unique subjective interpretation of the world establishes a routine for dealing with reality. Individuals develop different mental models as experiences, cultural norms and values, and relationships all vary. These factors have an enormous impact on the development of mental models, and their various influences result in the creation of different mental models for different individuals.[22] An individual's cognition now consists of endless numbers of thoughts and beliefs, and many mental models, all contributing meaning to that person. This construction of thought and belief, based on experiences and determined meaning, become one's identity.

Author Daniel Lefkowitz, in his book *Words and Stones*, provides a look into the meaning, functions, and sources of identity. He states that identity has multiple functions: to differentiate individuals, recognize social group membership, and even as a form of power.[23] An individual's identity is comprised of many facets of social elements, such as nationality, religion, and occupation. There is a direct correlation between these social elements and the thoughts and beliefs that individual uses. These elements shape an individual's experiences and the relationship the person has with these elements is close, hence why they are facets of his identity. Groups of people can be formed by many functions or associations, including religious, cultural, and national. Groups and sub-groups of individuals coalesce through a sense of identity forming larger populations with shared interests based on that identity. Identity becomes power as individuals and groups compete based on different beliefs. Conflict over space is a common example, where the meaning of that space is contested by different interpretations of identities.

[22] Heuer Jr., 1-4.

[23] Daniel Lefkowitz, *Words and Stones: The Politics of Language and Identity in Israel* (Oxford: Oxford University Press, 2004), 76-77.

National identity is perhaps one of the most important of the many forms of identity.[24] One's national identity holds significant value in land, where a sense of belonging and ownership reside. This symbolic attachment to land becomes a significant part of an individual or group's identity, and beliefs about ownership of land, reflected through borders and sovereignty as well as social activity, holds significant implications for that sense of identity.[25] Thus, considering identity as a form of power, the demarcation of the territory through a border can be an influential application of power with respect to identities of entire groups. The space at the center of the conflict is important because of the meaning it holds. Different identities, groups and individuals, hold different beliefs and meaning to the same space due to the different paradigms with which they view the space.

What is a paradigm? Paradigms are a comprehensive worldview and interpretive frame of reference for an individual – it is the lens with which a person views the world when conducting any activity. A paradigm is a cognitive compass that guides a person through reality, oriented by a unique set of thoughts and beliefs. While a magnetic compass points north, a cognitive compass points in the direction one thinks one ought to follow. It is a basis for interpretation, filtering signals from noise, nonsense from meaningful observation. Each paradigm is different, as it is shaped by the experiences of that individual, or group of individuals, and structures both institutions and behaviors. Different identities of people, with different backgrounds of religion, culture, and history, inherently view the world through a different lens. No paradigm is necessarily advantageous over another, but they are most certainly different. The only certain disadvantage, and where consequence resides, is not recognizing that different compasses exist.

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[24] Anssi Paasi, *Boundaries as Social Processes: Territoriality in the World of Flows, Boundaries, Territory and Postmodernity* (Portland, OR: Frank Cass Publishers, 1999), 69.

[25] Mira Sucharov, *Regional Identity and the Sovereignty Principle: Explaining Israeli-Palestinian Peacemaking*, 185-88.

Contrast in the Cognitive Dimension

A society fosters the thought of an individual. In *The Social Construction of Reality,* Peter L. Berger and Thomas Luckmann describe a "sociology of knowledge," the idea that societies derive knowledge from social interactions.[26] There are countless different variations of societies that may be distinguished by differing cultures, occupations, religions – each having a theory of knowledge that is different, more or less, than another. Regardless of one's interpretation of the validity of the knowledge, the important element is that the social interaction shapes knowledge and causes reality to appear differently to different people across the world. Therefore, a US commander's application of the operational art is imbued with the history and character of western culture. He is a product of a personal, institutional, doctrinal, and experiential reality. A western paradigm, rooted in the history and culture of the United States, forms the lens with which he develops his operational approach.

Berger and Luckmann's theory of the sociology of knowledge argues that knowledge is formed by "the relationship between human thought and the social context within which it arises."[27] One can gain an appreciation for how an individual's base of knowledge was formed by studying its associated human thought and the context surrounding it, giving some insight into that worldview – it lends that perspective. Military commanders from different cultures inherently employ unique cognitive processes in planning and strategy development. An unchallenged western paradigm remains limited within a single school of thought and poorly accounts for the different paradigms of other cultures. When commanders engage one another in military operations, they see the conflict differently and will act in conjunction with that view.

Author Richard Nisbett studied differences in thought across people of different cultures and identified distinguishable characteristics. Nisbett contrasts western thought and eastern

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[26] Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City, NY: Anchor Books, 1966), 3.

[27] Ibid., 4.

thought with multiple examples. Based on his research, he argues that Easterners attend more to the environment while westerners attend more to objects. Easterners live in a world where external forces are important, whereas westerners emphasize personal agency and manipulation to serve goals. Easterners have a holistic view whereas westerners have an analytic view. Finally, he states that Easterners see the world as quite complex whereas westerners have an "illusion of control."[28] Nisbett's findings identified that there are key differences in the views of people from eastern and western cultures. Although his example contrasts the east and the west, similar differences exist across all cultures. These takeaways are nuanced, as not all westerners think the same, but general differences in thought, reasoning, and perspective can be found.

The western paradigm that is embedded in a US Army commander is shaped by a sociology of knowledge unique to western cultures. More than one billion people today are informed in their knowledge from Ancient Greece which shaped the modern western paradigm.[29] It is informed by prominent voices and thinkers as well as the social context that has surrounded the culture. Theorists shape the learning process with their ideas and can have significant impacts on the cognition of minds growing from those cultures. These prominent voices and key influencers of thought play a significant role in how "cultures arise and evolve from collective efforts of human brains, over many generations."[30] For a western military commander, the ideas of Carl von Clausewitz, Alfred Mahan, and Antoine-Henri Jomini are among many that have shaped ideas on war and warfare. For example, US Army doctrine today heavily reflects the ideas of Carl von Clausewitz which were, in turn, heavily influenced by the European wars of the early 19th century; his ideas, engrained with the historical context of that time, are prominent in the

[28] For the purposes of this paper, "western" means a cognitive approach, derived from Ancient Greek study and knowledge that resides within individuals from countries like the United States, England, and France, among others. Richard E. Nisbett, *The Geography of Thought: How Asians and Westerners Think Differently...and Why* (New York: Free Press, 2003), 40-45, 79, 82, 100.

[29] Ibid., 1.

[30] Damasio, 29.

elements of operational art.[31] The concepts that Clausewitz brought to light are heavily engrained in the understanding of US commanders, perpetuated by the group – the many minds in US Army culture sharing this belief.

Thus far, the case was made that to better understand another person's paradigm one must examine the person's cognition – understanding how they think and what they believe – as well as the social context influencing that perspective. This must be accompanied by reflective thinking where all judgment and morality is suspended for the sake of understanding.[32] One's judgment or morality may influence a person to dismiss the alternate paradigm for reasons that conflict with one's values. While one may disagree with an idea, and for good reason, this is unhelpful for understanding. Instead, one must suspend disbelief in an effort to understand the logic of the other person's paradigm. Suspending judgment during reflective thinking will be painful, but necessary.[33] Without judgment, the logic of action may be revealed, providing a basis for understanding potential future actions.

When examining and attempting to assume the view of an alternate paradigm, one should avoid a potentially significant error. There is a common pitfall known as "mirror-imaging," where one assumes that the other side would act in a certain way because that is how he would act.[34] Instead of using another compass, one substitutes it with one's own compass. This replaces the paradigm of the other actor with one's own, substituting different thoughts, beliefs, and meanings. Instead of appreciating the variation of azimuth that the other compass provides, and determining the impact, the variance is negated. This poor assumption misses the point, but because of the unconscious nature of mental activity, it persists.[35] With mirror-imaging, what

[31] US Department of the Army, *Army Doctrine Reference Publication (ADRP) 3-0, Operations* (Washington DC: Government Printing Office, 2017), 2-4.

[32] Dewey, 13.

[33] Ibid.

[34] Heuer Jr., 70.

[35] Ibid., 1-4, 66.

ultimately results is a fundamental surprise due to this error. The other actor acts in a way that does not make sense; it is illogical to one's own thinking. However, the action of that actor was directly on course per the compass they were using. The logic was there, but the paradigm was missed.

Understanding the power of cognition and how it functions enables an individual to maneuver in the cognitive dimension. When a commander is aware of this activity and can detect its repercussions in others, he is emboldened in his own strategy. Understanding the cognitive impacts of the enemy or the population provides understanding to how their beliefs will inform their actions, and how their actions combine to form a strategy. By using another cognitive compass, the values and beliefs of another paradigm reveal the foundation from which events and conflict in an operational environment will unfold.

Like any compass, it is useful in conjunction with maps. As a magnetic compass assists with finding true north on a physical map, a cognitive compass assists with interpreting cognitive maps. Maps are designed to assist in visualization and understanding of space, but they are limited to the purpose for which they were crafted. To navigate the belief and meaning of physical space, a cognitive map should be created and used. The following section will explore these different types of maps, taking a look at their purpose, and how a cognitive map provides a deeper understanding of the meaning of the space.

The Meaning of Space on a Cognitive Map

Maps are powerful tools with a number of different purposes. Map-making has been used to legitimize the acquisition of territory, as it is "one of the specialized intellectual weapons by which power could be gained, administered, given legitimacy and codified."[36] Political maps depict the sovereign territory of states through borders that outline the territory of a state. A second type, military maps depict elements of the terrain that are useful to understand how one can conduct operations in that space, such as the width or quality of a major roadway and the height of a nearby hilltop. Both of these types of maps are useful, but their power to provide understanding is limited to their intended purpose.

Maps are visual depictions of the terrain, but not the terrain itself. A third type of map, a cognitive map, is one that presents the meaning of the landscape. It includes elements of history, sociology, and ideology overlaid onto the terrain that reflects the depth of meaning residing in it. Cognitive maps present the way individuals, or groups of people, perceive the terrain. It sees objects for their meaning as cognitive structures, and not for empirical features. Cognitive maps, therefore present the subjective meaning of the terrain, or sets of meanings that are critical to understanding the physical space. They are an essential addition to political and military maps to gain a holistic understanding that may inform a plan.

The Neat Presentation of States on Political Maps

The world political map displays a powerful but simple depiction of international boundaries; state sovereignty appears neat and orderly (see Figure 1). It is a reflection of the international order that organizes the interaction of nation-states and the environment appears set and established. State sovereignty appears as a physical feature of the space. If one were to mistakenly accept this depiction of the world as reality, international borders become fixtures of

[36] Meron Benvenisti, *Sacred Landscape: The Buried History of the Holy Land Since 1948*, trans. Maxine Kaufman-Lacusta (Berkeley, CA: University of California Press, 2000), 44.

the space, rather than negotiable interpretations. In this manner, the state-centered system, with its borders and boundaries, defines how many understand the world.[37] When one views a border as an empirical feature of a landscape, almost as though it is an object on the terrain, one may miss the alternative meanings that reside in it.

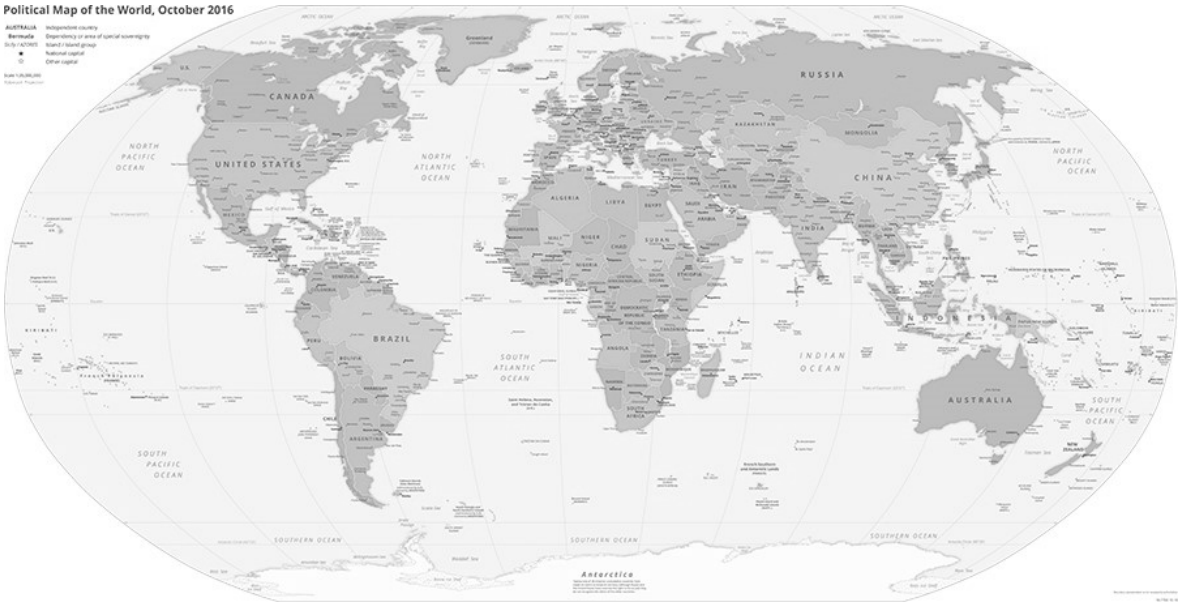

Figure 1. Political Map of the World, October 2016. Central Intelligence Agency, accessed 1 March, 2018, https://www.cia.gov/library/publications/resources/cia-maps-publications/.

Changes in the world raise key questions regarding the importance of political maps. Globalization has reduced the state-centered approach to the global system. Ethnic and national groups such as the Kurds and the Palestinians, each with their own subsets of different identities, are among the non-state actors today who are seeking self-governance and independence. International boundaries are more permeable due to trans-border movement.[38] This activity is essential to understanding the space beyond the Modernist reflection that this world political map represents. More than the value of the political map is at stake; the foundation of the international

[37] Paasi, 69.

[38] David Newman, *Geopolitics Renaissant: Territory, Sovereignty, and the World Political Map,* 3-5.

system is being challenged.[39] This necessitates a different visualization beyond the depictions of political maps.

The Science of Warfare on Military Maps

Military maps are a second type of map that serve the function of allowing a military commander to understanding the environment with specific respect to conducting operations in that space. Several volumes of doctrine reflect the US Army's aim to provide tools and methods to break down the environment into scientific formulas and frameworks to analyze a given piece of terrain. As Nisbett pointed out, western thought processes categorize, in order to analyze, the elements of the world.[40] This is epitomized by the US military on military maps where the space is categorized so that it may be analyzed in terms of functionality to conduct operations.

The US Army often demonstrates categorical thinking using various frameworks to reduce something, such as terrain, into more manageable parts. In analyzing physical space, US Army doctrine states that "terrain appreciation—the ability to predict its impact on operations—is an important skill for every leader. For tactical operations, commanders analyze terrain using the five military aspects of terrain, expressed in the Army memory aid OAKOC (obstacles, avenues of approach, key terrain, observation and fields of fire, and cover and concealment)."[41] This structure of terrain analysis enables a commander to categorize important military aspects to terrain, but he cannot mistake it for an understanding the importance of those elements (see Figure 2). This method presents terrain in a simplistic manner that further encourages a commander to exert personal agency over terrain. This analysis is useful for the more scientific aspects of warfare, but it does not provide a deep understanding of the operational environment.

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[39] Mathias Albert, *On Boundaries, Territory and Postmodernity: An International Relations Perspective*, 55.

[40] David Newman, *Geopolitics Renaissant: Territory, Sovereignty, and the World Political Map*, 44-45.

[41] US Department of the Army, *Army Techniques Publication (ATP) 2-01.3, Intelligence Preparation of the Battlefield/Battlespace* (Washington DC: Government Printing Office, 2014), 3-6.

OAKOC aspects	*Terrain effects*
Obstacles	Wadis throughout the area of operations with an average depth of 5 to 10 feet and an average width of 20 feet that runs 6 to 10 kilometers long. Above-ground oil and transport pipeline that runs through the central width of the area of operations.
Avenues of approach	Primary and secondary road systems for high avenues of approach. Generally flat terrain with brigade-sized mobility corridors between small villages. Railroad in the north running east to west.
Key terrain	Airfield used as resupply and troop movements. Dam control waterflow on the river and is the primary objective of the threat/*adversary*.
Observation and fields of fire	Sparse vegetation on generally flat desert terrain with observation of 3 to 5 kilometers. There are 10 kilometers between intervisibility lines. Air support observation is unlimited due to sparse terrain and curve of the earth. Fields of fire for direct fire is 300 to 500 meters for small arms.
Cover and concealment	Cover is provided by intervisibility lines. Concealment is limited by the open terrain and sparse vegetation.

Figure 2. Terrain Effects Matrix. Army Techniques Publication 2-01.3 (2014), 4-17.

The Military Decision-Making Process, or any problem-solving method, is only as good as the thought that one puts into it. Reductive frameworks are useful means for calculations, but deeper thought is required to make the understanding valuable and reassemble the reduced components back into a whole. Military maps are insufficient to understanding the space and the nature of the conflict. As the explanation on thought and social context has illustrated, physical space is intertwined with the social aspects of any operational environment that provide this meaning. Overlaying the cognitive dimension onto the physical space then incorporates not only the physical aspects of the environment, but their existence as cognitive structures as well.

Cognitive Maps Reveal Meaning of Space

While biases are unavoidable, one can mitigate them through an examination of the cognitive maps; one should treat the map as an artifact imbued with meaning rather than as a depiction of the terrain.[42] A cognitive map views not the physical properties of the space, but is a map of meaning. The land that a political or military map represents exists in the minds of people as cognitive structures with an importance that cannot be determined through an examination of its physical properties. Cognitive maps pull out the historical, social, cultural, and ideological elements that are imbued within that space. What is extracted in this process, is a visualization of

[42] Mathieu Primeau, "Discursive Maps at the Edge of Chaos" (US Army Command and General Staff College, 2017), iv.

the terrain that reveals the important aspects of space through the lens of the resident people of that space.

A better way to understand a space through multiple lenses is to use a cognitive map. For example, a cognitive map would reveal the location of cognitive borders which may be more meaningful and pertinent to a military operation. Borders can serve as territorial markers and as functional ones, serving social needs to a greater usefulness than the borders of territorial nature.[43] Their interpretations are necessary to understand the hidden meaning that is unapparent on another map. Social, cultural, historical, and ideological aspects influence the meaning and thus the position of territorial boundaries. The border is not simply a marker on the space; it manifests itself in social and cultural practices by the people who reside in that space.[44] Borders influence behavior and action, having become cognitive structures in people's minds that shape their reality and function in life. In this manner, borders are better understood as institutions and symbols that organize social spaces, rather than demarcating lines of geography.[45] Borders are a social process of sense-making, created by a culture or group of people to improve the social function of space. These interpretations of borders are aspects of the different paradigms of actors within a space. Depicting these borders on a cognitive map helps reveal alternate understandings of the space, and the meaning behind action that occurs within the space (see Figure 3).

[43] Albert, 61.

[44] Ibid., 63.

[45] Anssi Paasi, *Boundaries as Social Processes: Territoriality in the World of Flows*, 72; Doreen Massey, "The Conceptualization of Place," *A Place in the World?* (1995): 68, https://trove.nla.gov.au/version/46660953.

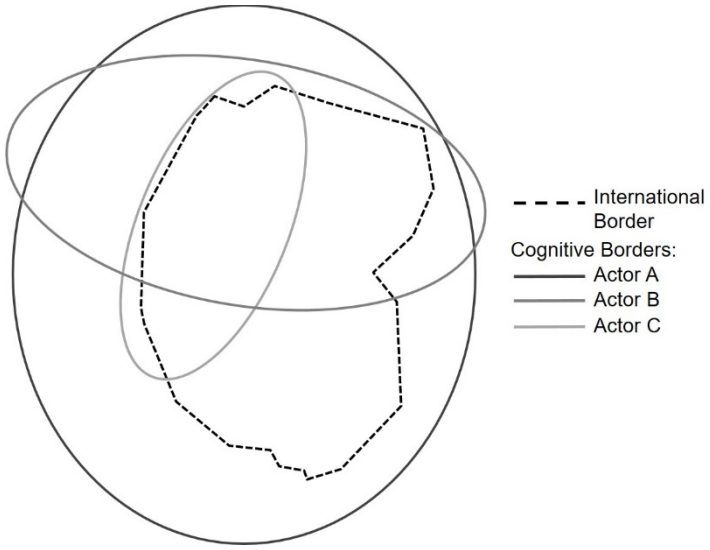

Figure 3. Conceptual Representation of Cognitive Borders. Source: author.

The creation and understanding of cognitive maps creates a new visualization of the operational environment, inclusive of the meaning of the space. Exploring the cognitive dimension will reveal the various interpretations of the space, acknowledging the different cognitive structures of the same space that exist to understand the meaning of that space. Imbued in the space of the operational environment are social artifacts, institutions and symbols, appearing as elements of the physical space, but holding meaning beyond their appearance. The history of the space holds layers of meaning that are not physically present, but present in the minds of actors operating in that space. Modifying a US Army Training and Doctrine Command depiction of Multi-Domain Battle, the unapparent aspects of the cognitive dimension can be visualized in a space using a cognitive map (see Figure 4). Visualizing and understanding the space in this ways puts action into context. The actions of other interested actors become aligned with one's understanding of what the space means to them. This understanding of meaning can enable strategic exploitation, manipulation to achieve a realistic end state because the source of conflict is known.

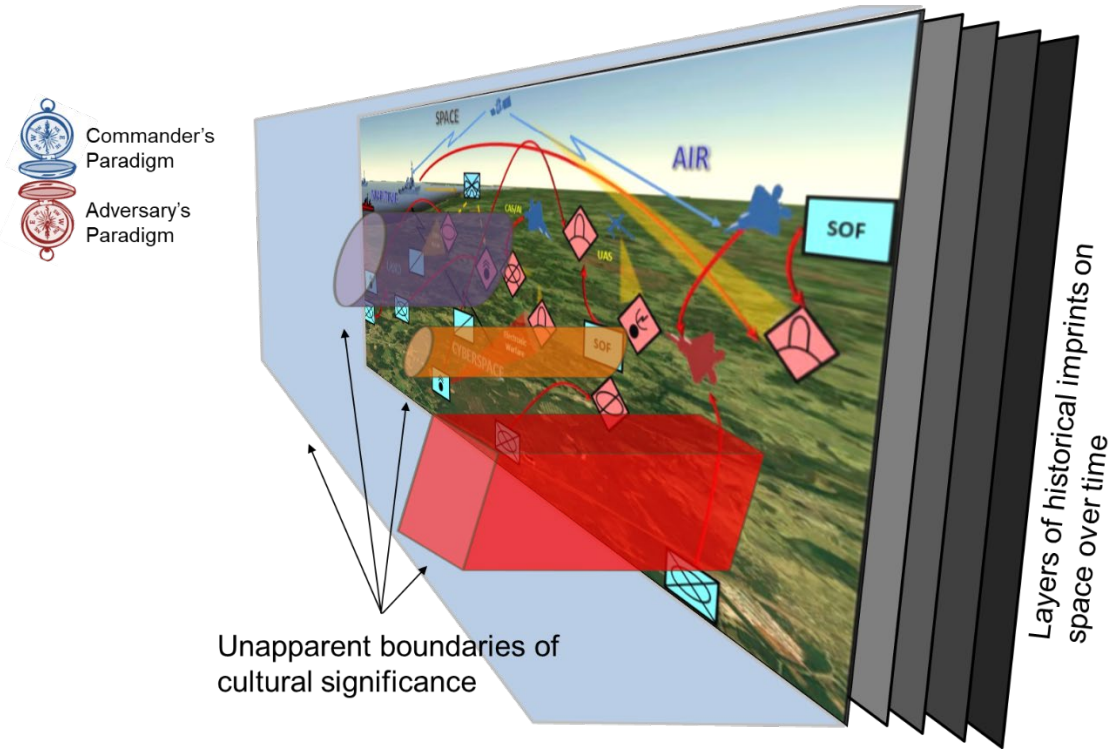

Figure 4. Cognitive Mapping of Space. Adapted from United States Army Training and Doctrine Command.

These findings would not be evident in the normal perusal of a map of the terrain. Critical in the examination of a map, then, is the acknowledgment that a map does not always communicate the same information to each observer.[46] Using cognitive maps to inform the observer of other perspectives, reflective of the social, cultural, historical, and ideological elements that reside in that space, is key to achieving a greater understanding. For a military commander, this greater understanding leads to powerful realizations such as the source of conflict, appropriate end states and conditions for conflict resolution. In the following section, a case study on Israel will illustrate how borders hold greater meaning and a sense of identity for millions of people.[47]

[46] Primeau, 7.

[47] Lefkowitz, 76-77.

Layers of Borders in Israel and Palestine

Over the last one-hundred years, dramatic changes and conflict shaped the history of what was Ottoman Palestine. The fall of the Ottoman Empire and the First World War ignited both opportunity and confusion as multiple parties sought to seize ownership of that symbolic space. A series of maps best explains the different interpretations of the meaning of the space, and what the potential futures might look like. Political agreements during the First World War presented contradictory understandings of control of the territory and, therefore, meaning of that space. This was further exacerbated by the cognitive borders in the minds of different people that overlaid religious and cultural meaning onto the same space. Political aims, contextual interpretations, and identity were manifest as borders, both on maps and in peoples' minds, creating many layers of conflicting meaning in the same space. A struggle for identity of the Palestine region ensued contributing to decades of conflict and war.

As the First World War was fought overtly in the trenches of Europe, Allied and Central Powers simultaneously competed for future control of the Middle East territories controlled by the declining Ottoman Empire. There was a deep British concern that the land of Palestine, on the borders of the British protectorate Egypt, may be controlled by the Germans after the fall of the Ottomans who were already in danger of dissolution as the First World War began.[48] Many countries wanted direct or indirect control of the region to protect their interests abroad; garnering support of populations interested in control of Palestine would facilitate this control.

The Allies and the Central Powers competed for support from populations across the globe, including Arabs in the waning Ottoman Empire and Jews across the world, to control the Middle East. Across the warring countries, local Zionist federations maintained their nationalist ties to their home countries, but urged their respective states to take initiative in establishing a

[48] M.E. Yapp, *The Making of the Modern Near East: 1792-1923* (New York: Longman, Inc., 1987), 289.

Jewish homeland in Palestine.[49] Similarly, some Arabs sought to establish their own homeland in the Levant, independent of their Turkish rulers. They each sought to advance their own national ideas ultimately through self-governance; after all, making a claim against territory is the very essence of nationalism.[50] States sought to build relationships with these populations of people to leverage their support against their enemies in the war. One of the earliest such negotiations was between the British High Commissioner in Egypt and the independence-seeking Arab Ottoman Sherif of Mecca.

The Hussein-McMahon Correspondence was the first such agreement by where the British Empire promised Arab independence in the Middle East in exchange for their support in the war. Sherif of Mecca, Hussein bin Ali exchanged a series of letters with British High Commissioner Sir Henry McMahon that negotiated terms for Arab independence in the Middle East. On 14 July, 1915, Hussein sent his conditions to McMahon in his first correspondence, including a British guarantee for Arab independence.[51] In a later response, McMahon replied that he was now prepared "to recognize and support the independence of the Arabs in all regions within the limits demanded…with the exception of those portions of Syria lying to the west of the districts of Damascus, Homs, Hama and Aleppo." This negotiation of the space was accepted and became one of the earliest political agreements to shape the Post-Ottoman Middle East. The British gained an ally whom would soon revolt against the Ottomans and permit the British to protect their interests in the region.

Although they struck an agreement, Hussein and McMahon's division of the territory was as troubling as it was simple. They each represented their broad interests on behalf of their parties, independence for Hussein and security for the British, but the details of the map left some

[49] Howard Sachar, *The Emergence of the Middle East: 1914-1924* (New York: Alfred A. Knopf, Inc., 1969), 195.

[50] Benvenisti, 47.

[51] Sachar, 126.

questions unresolved. Multiple cities, Damascus, Home, Hama, and Aleppo lay right on the border between British control and Arab independence which does not make clear who owns those key spaces (see Figure 5).[52] This rudimentary map became the first visualization of the future of Palestine; additional agreements would further confound this space. New, uncoordinated negotiations would add additional, conflicting understandings of this space over the coming years.

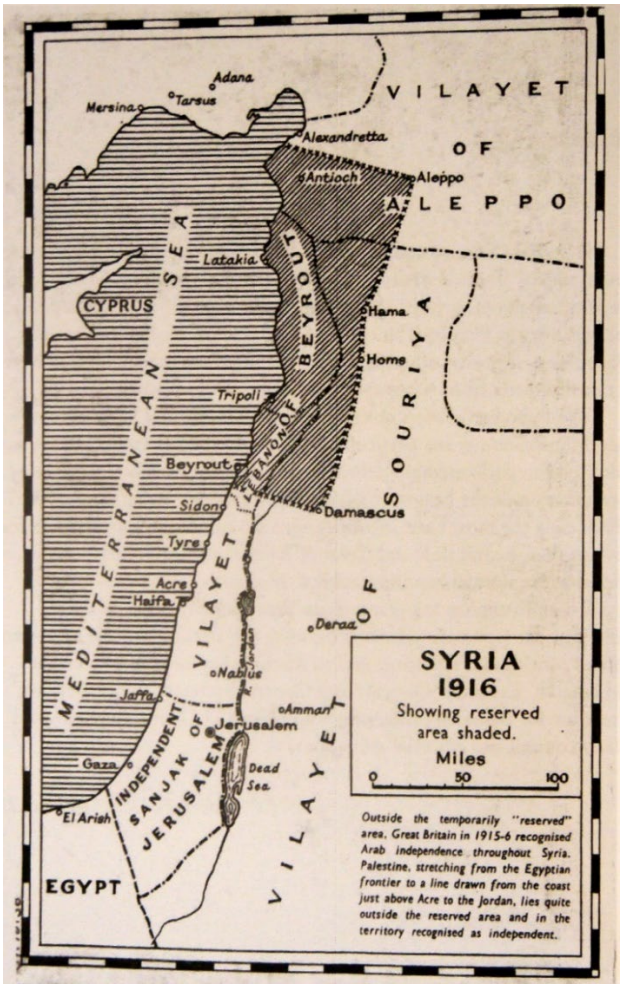

Figure 5. Syria 1916. J. M. N. Jeffries, *Palestine: The Reality*.

While Hussein believed the Hussein-McMahon Agreement would represent the future of the Middle East, representatives of the British and French governments negotiated independent of

[52] The city of "Home," as reflected on the Hussein-McMahon map, is alternatively spelled as "Homs" in other source documents but is the same location.

Hussein. Mark Sykes representing Britain, and Francois Georges-Picot, representing France, were compelled to negotiate the future of the Middle East as Russian successes against the deteriorating Ottoman Empire called into question the future control of that space. The Sykes-Picot Agreement organized the Middle East into areas of British and French control and influence; of particular note, the Levant fell near the intersection of British and French controlled areas further complicating any shared understanding of this space as multiple global powers sought to operate within it. Two politically driven maps to apportion this space sought interests at the expense of agreement and shared understanding. A second and contradictory division of the space further complicated this space.

Sykes-Picot reflected the interests of the Allies, but increased confusion regarding the self-governance of Hussein and the Arabs. The French were particularly pleased with the direct and indirect control of Syria, a land the French traditionally desired, and the British maintained its indirect control of the southern Levant, but more importantly access from the Mediterranean Sea and important avenues further east that accessed British interests in India (see Appendix A for the Sykes-Picot Agreement).[53] Sherif Hussein and the Arabs' understanding would differ, based on the Hussein-McMahon correspondence in significant ways. First, Hussein believed that the Syrian interior would be independent of French control. Second, it was unclear whether the precise positioning of the Palestinian Holy Land fell under Arab control.[54] Further, the control of many cities and areas in Sykes-Picot, but especially the disposition of Haifa and Jerusalem, make unclear the extent to which Arab's would receive independence (see Figure 6).[55] The spheres of influence in Sykes-Picot conflict with the vague depictions of control in Hussein-McMahon. This convolution of space and identity, questionable areas of control and influence, set up an unclear understanding of the future of the space.

[53] Sachar, 158-66.

[54] Ibid., 172.

[55] Yapp, 281.

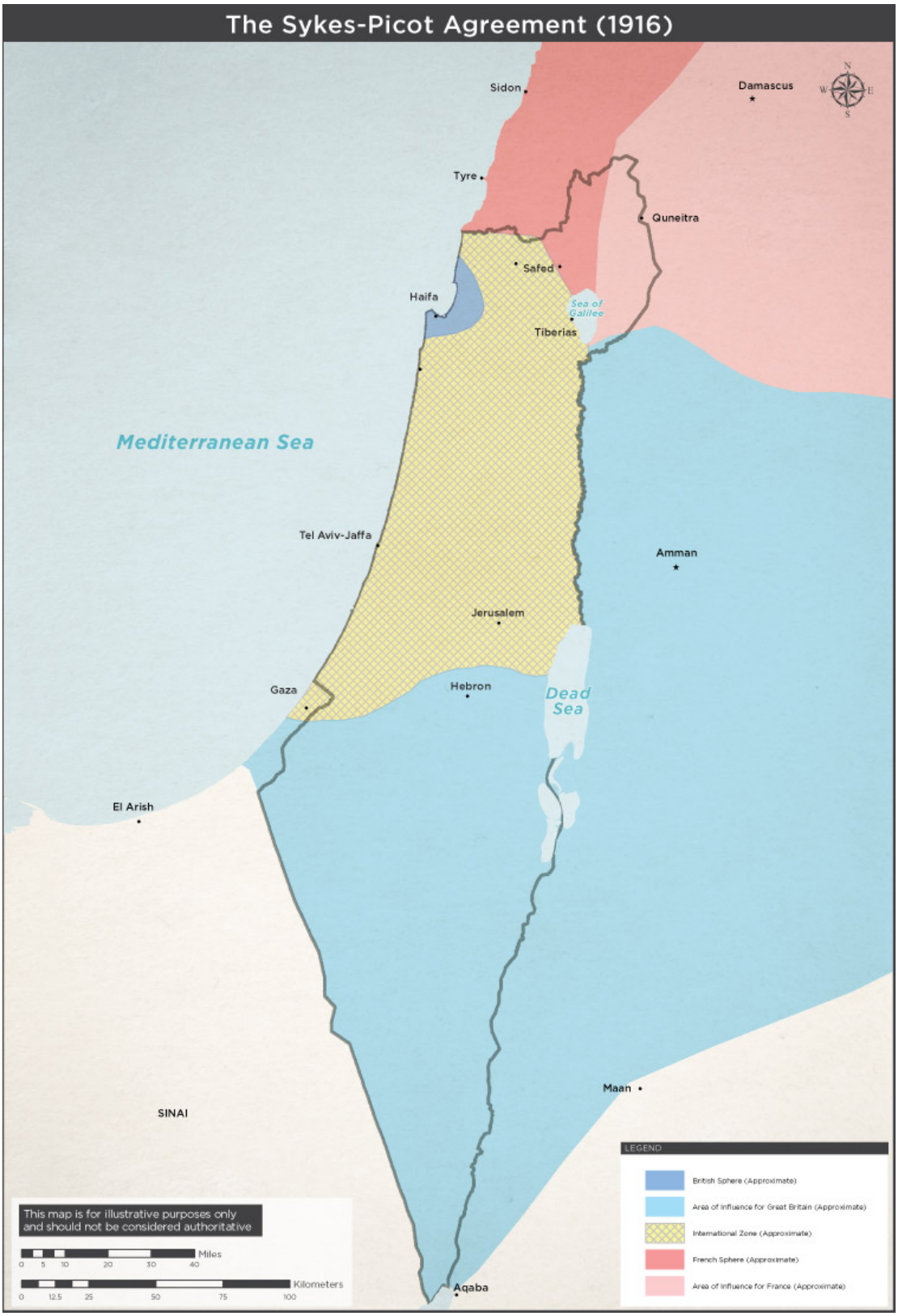

Figure 6. The Sykes-Picot Agreement (1916). Israel Ministry of Foreign Affairs, accessed 1 March, 2018, http://www.mfa.gov.il/mfa/aboutisrael/maps/pages/israel%20in%20-maps.aspx.

Shortly after seeking a partnership with Hussein and Ottoman Arabs to defeat the Ottoman Empire, the British also negotiated with the Zionists. The British negotiated with both Arabs and Zionists, and even promised them overlapping territories, because each were key in assisting the war effort in different ways. The British were accessing the power of the global Jewish population, with particular interests in the Jews of America and Russia. Building favor with these groups, and their interests being dependent on the war's outcome, the groups would influence to keep Russia in the war, and increase the role of the United States.[56] In exchange, the British demonstrated support for a national Jewish homeland in Palestine in the Balfour Declaration (see Appendix B). A third political map of the area, a national home for the Jews in Palestine, was created (see Figure 7). This directly conflicted with what was promised to Hussein and the Arabs, and yet to further complicate the Declaration, the size of territory allotted fell short of the desires of some Zionists.

The political Zionists' success achieving British diplomatic support was a key step in the realization of their dream of a Jewish homeland in Palestine, but the allocation of territory was insufficient to some. Depicted in Figure 7 is an ideational border, a line depicting the World Zionist Organization desire for the size of the Jewish homeland; specifically, it extends further north and southwest than the Balfour Declaration provided. To reinforce the claim to the territory, Jews emphasized the symbolic and historical attachment to this land, referencing their liturgies and folk songs that for generations have looked forward to the return to the Holy Land.[57] This symbolic attachment traces back to ancient times and the cognitive map of the Twelve Tribes of Israel (see Figure 8). The religious significance of the territory is depicted in the locations of the twelve Hebrew tribes that occupied the Promised Land – thus the occupation of the territory links to the religious belief in the one God of Israel. That unfilled claim carried with it religious and

[56] Sachar, 213; Yapp, 291.

[57] Sucharov, 186.

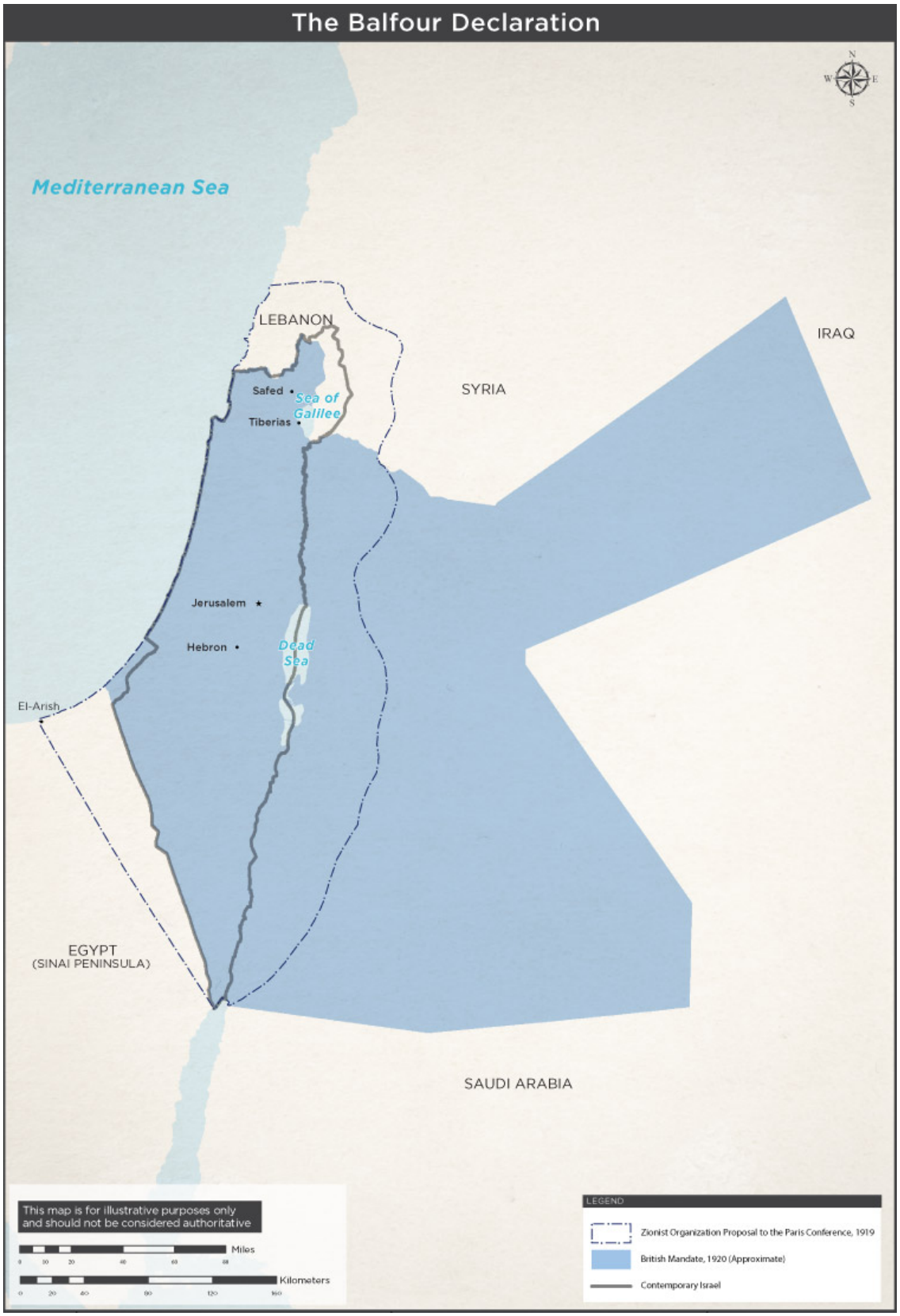

Figure 7. The Balfour Declaration. Israel Ministry of Foreign Affairs, accessed 1 March, 2018, http://www.mfa.gov.il/mfa/aboutisrael/maps/pages/israel%20in%20maps.aspx.

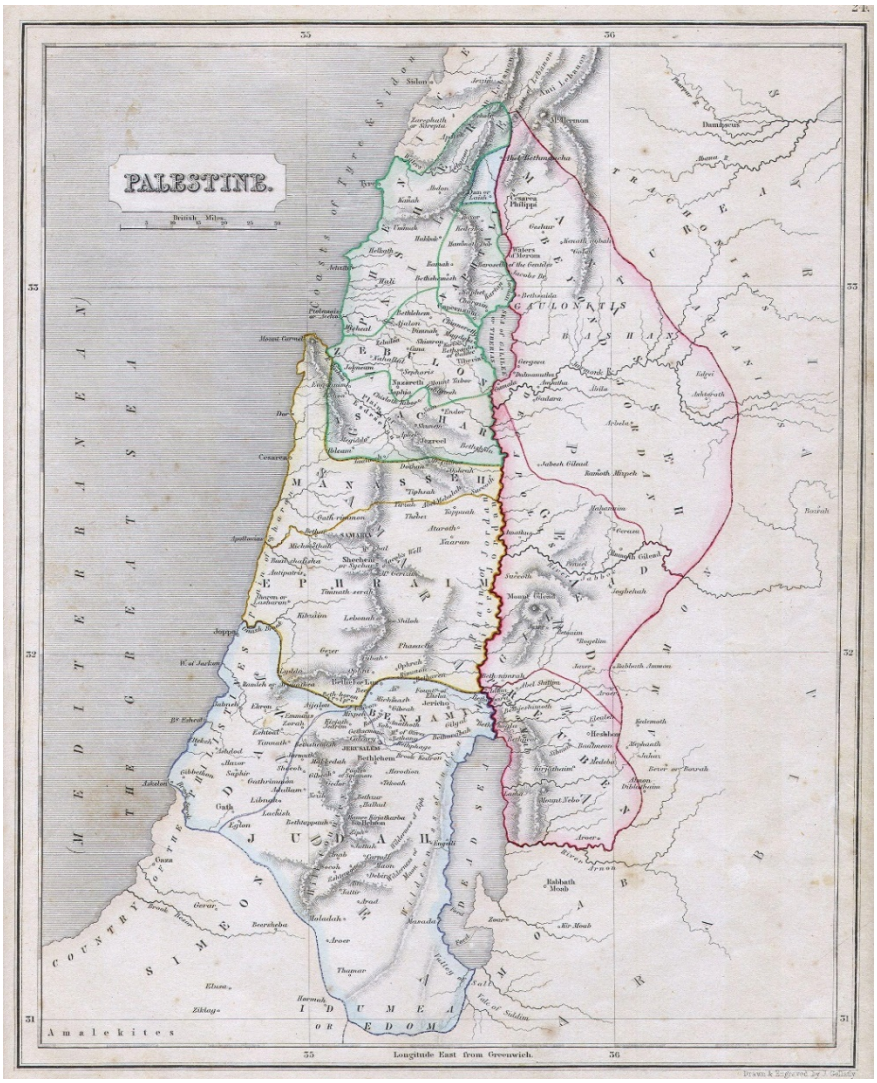

Figure 8. 12 Tribes of Palestine. William and Robert Chambers (1845), accessed 1 March, 2018, https://commons.wikimedia.org/wiki/File:1845_Chambers_Map_of_Palestine_-_Israel_-_Holy_Land_-_Geographicus_-_Palestine-chambers-1845.jpg.

historical significance attached to that land, and this would be a continued point of contention in the years to come as cognitive expectations conflicted with political realities.

As foreseen, the Ottoman Empire collapsed and Britain, owing in no small part to its interests in the area, received a mandate from the League of Nations to govern Palestine in 1922 at the Treaty of Sèvres (see Figure 9).[58] Britain sought to maintain order and security in the

[58] Lefkowitz, 36.

region during a time of fundamental change in the region, after the First World War, to secure its land

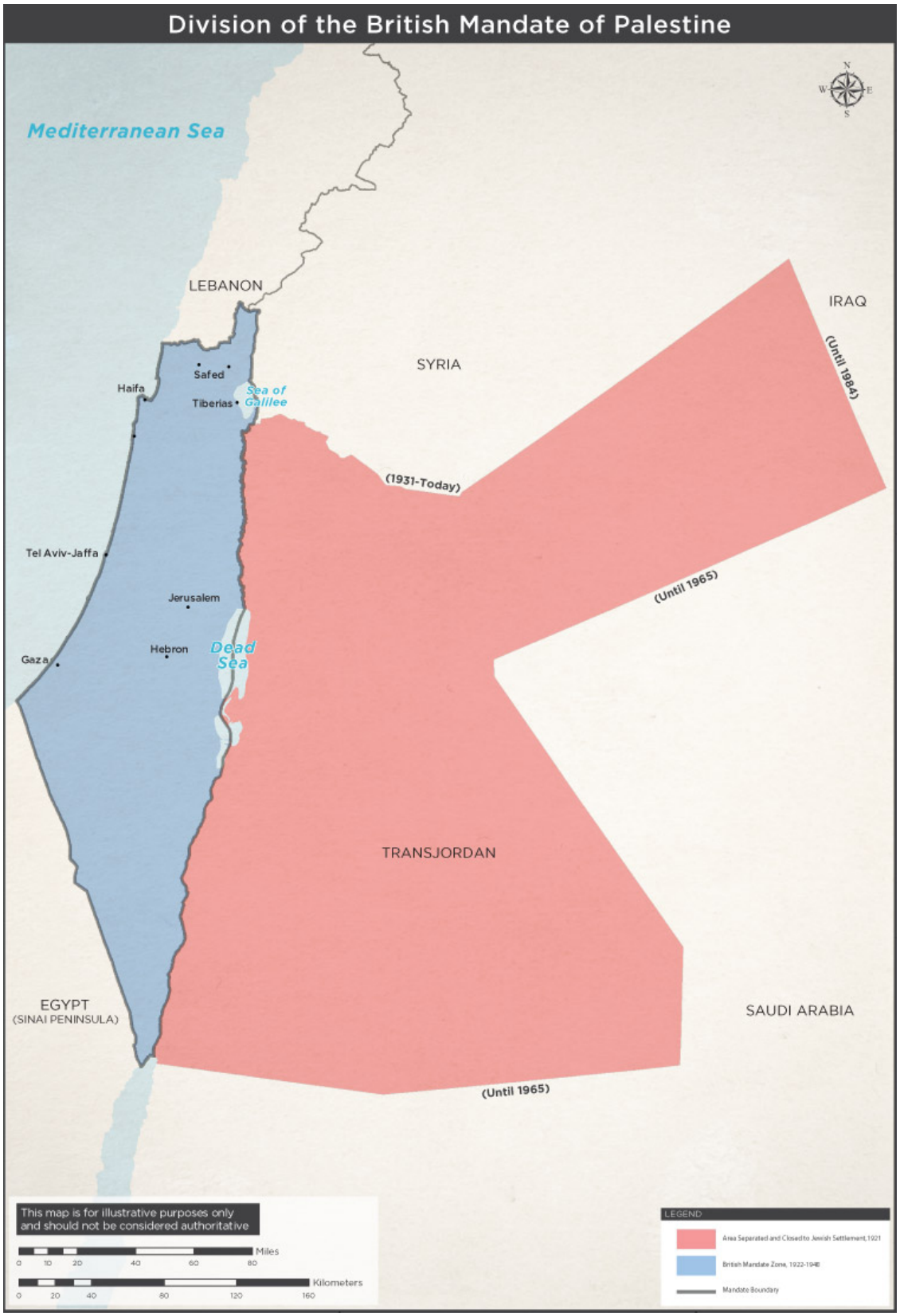

Figure 9. The British Mandate. Israel Ministry of Foreign Affairs, accessed 1 March, 2018, http://www.mfa.gov.il/mfa/aboutisrael/maps/pages/israel%20in%20maps.aspx.

bridge from the Suez Canal in Egypt to its interests in India. The principal historical feature of Palestine during the British Mandate period was the change in populations. By 1947, the population of Palestine grew by two-million people, of which about two-thirds were Arab (Muslim and Christian) and one-third were Jewish. While the Arabs grew their population naturally, a majority of the Jewish increase in population came through immigration. The Jewish immigration came in waves from the end of the First World War, and finally reached a significant enough size in 1936, at 400,000, that these European, mostly Zionist Jews could begin to fathom the creation of a state.[59] A battle for an association of identity with the space ensued as these changes in population were coupled with dramatic rises in dividing nationalist identities on both sides.[60]

A principal factor in Palestinian nationalist identity is the demand for self-determination, which many Palestinians view as a legitimizing force to take ownership of the space.[61] The Arabic word for Jerusalem is al-Quds, or 'the Holy' and thus presents a significant issue with the idea of relinquishing sovereignty for something with such a strong symbolic attachment.[62] The purpose was outlined by the first Palestine General Congress which came together in February, 1920 to provide a unified response to the early 20th century Zionist efforts to settle in Palestine. The Palestine Congress declared that "Palestine is an integral part of Syria," and they "demand that it remain so."[63] Arab dominance of Palestine, having only recently made significant improvements felt threatened by the imposing Jewish settlers. "We consider the Zionist danger to

[59] M. E. Yapp, *The Near East Since The First World War* (New York: Longman, Inc., 1991), 117-18.

[60] Menachem Klein, *Lives in Common: Arabs and Jews in Jerusalem, Jaffa and Hebron* (Oxford: Oxford University Press, 2014), ix, 19.

[61] Sucharov, 183.

[62] Ibid., 186.

[63] James L. Gelvin, *The Israel-Palestine Conflict: One Hundred Years of War* (New York: Cambridge University Press, 2014), 98-99.

be directed against us and against our political and economic existence in the future."[64] Fundamentally, there were significant conflicts in the belief and meaning of the many Arab-Palestinian and Jewish paradigms that existed. Over the period of Britain's administration of Mandatory Palestine, multiple conflicts rooted in growing nationalism erupted, ultimately building to the civil war of 1947-48 following the plan to partition Palestine.

Both Arabs and the Zionists received independent agreements from the British that legitimized their view of the space. Arabs negotiated with McMahon, and fought and died in support of the British during the First World War to obtain their autonomy in the region. Conversely, political Zionists obtained a public declaration from the British vowing support for a Jewish homeland, which after the Holocaust of the Second World War was especially powerful in their case. Each paradigm held a legitimate, but different view of the meaning of that space. It was more than a territory; it was a contributing characteristic to their identity. However, these clashing interpretations of space soon grew to a violent conflict.

Jews and Arabs grew increasingly violent, both against one another as well as against their British authorities. On 31 August, 1947 the United Nations Special Committee on Palestine, which had convened to solve the problem on ongoing conflict in the Palestine Mandate, delivered its recommendation to divide the Mandate territory into an Arab state, a Jewish state, and an international zone surrounding Jerusalem (see Figure 10). The British responsibility for administrative control of the Mandate would end on 1 May, 1948, as a result of the Special Committee's finding, but also at Britain's own behest due to the enormous cost of manpower and resources to maintain its presence in Palestine.[65] However, removing the security that Britain provided would only add fuel to the fire. Britain's precipitous departure from Palestine left the Partition Plan without any significant method of organized transition or executor of peace and

[64] Gelvin, 98-99.

[65] Yapp, 117-36.

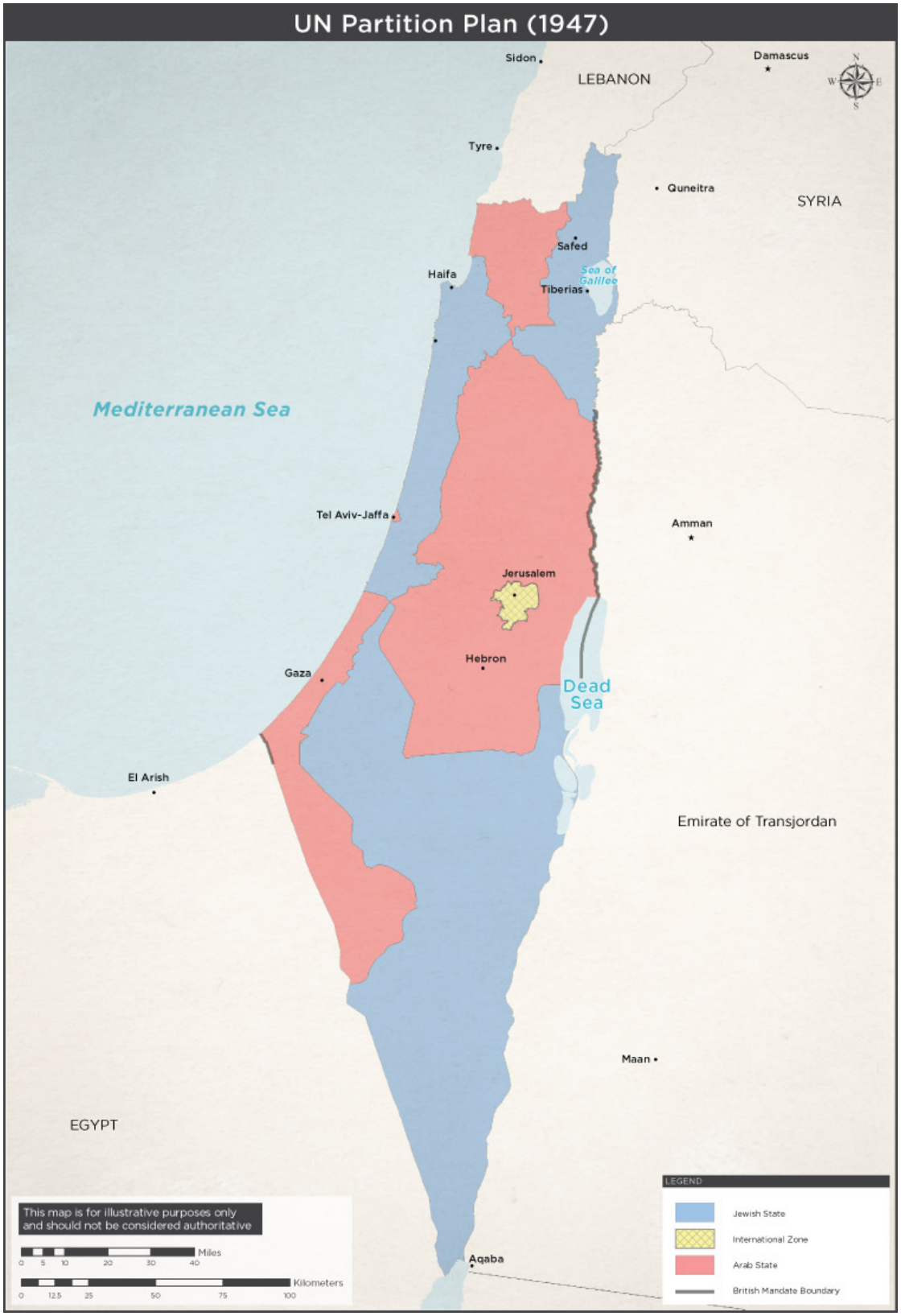

Figure 10. United Nations Partition Plan (1947). Israel Ministry of Foreign Affairs, accessed 1 March, 2018, http://www.mfa.gov.il/mfa/aboutisrael/maps/pages/israel%20in%20maps.aspx.

security. The result was that from November 1947 until May 1948, a civil war between Jews and Arabs took place in the Palestine region in which the two groups fought for their territorial interests. At first, the Jews, in an effort to maintain the territory that the Special Committee allocated to them, fought a defensive war that was largely successful. Then, in early 1948, they extended their control through an offensive, seizing Arab-allocated areas like Haifa and Jaffa.[66]

Shortly after the United Nations announced its plan, the Arab states dismissed the Special Committee's proposed Partition Plan as it did not reflect their understanding of how the space should be organized. The Partition Plan divided the proposed state with borders, but these borders were not functional nor consistent with the social and cultural needs of the space. The Arab states of Iraq, Lebanon, Syria, Transjordan, and the Palestinian Arabs attempted to organize both politically and military in forming the Arab League, but found difficulty in achieving cohesion. The Arab states, although unified under one group, held their own different conceptions on the end state of the war – whether the Jewish state should be eliminated or only reduced in territory. They fought a common enemy, the newly independent state of Israel, but due to disagreements, each Arab force fought separately with no agreed upon plan of action (see Figure 11).[67] Although the war was presented as one of Jews versus Arabs, this disagreement among Arab States demonstrated the complex perspectives even among allies in this war. The war ultimately ended not in a peace treaty, but in a number of armistices signed by both sides in 1949, and left the region's identity crisis unresolved.

The war reflected how nationalist and cultural interests that had been building since the First World War erupted in conflict over different understandings of the location of borders as they related to the identities of the inhabitants. Each paradigm had their own understanding of

[66] Yapp, 136-39.

[67] Ibid., 138.

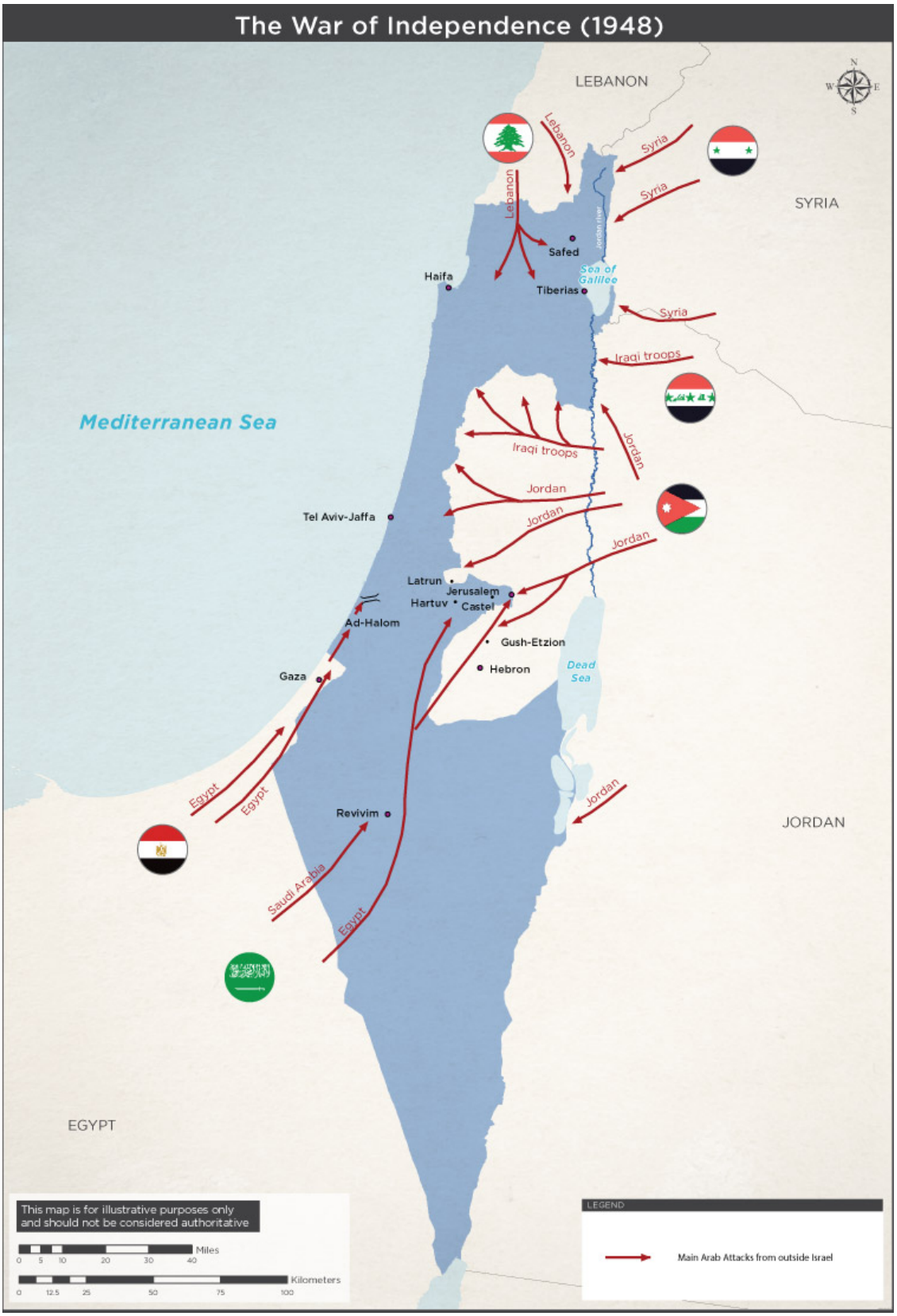

Figure 11. The War for Independence (1948). Israel Ministry of Foreign Affairs, accessed 1 March, 2018, http://www.mfa.gov.il/mfa/aboutisrael/maps/pages/israel%20in%20maps.aspx.

that space based on the political dialogue and associated maps that were useful for them. The overlapping of territories on these maps from political negotiations, like Hussein-McMahon, the Balfour Declaration, Sykes-Picot, the British Mandate, and the United Nations Partition Plan contributed to the conflict between two cultures of people. The United Nations sought to remedy the conflict with a two-state solution, but this compromise could not overcome the different beliefs and the meaning in the minds of the people in conflict, nor was it functional to their social needs. Generations of historical and cultural influences, imbued onto cognitive maps, combined with a layering of contradictory political maps following the fall of the Ottoman Empire, continued to determine different senses of ownership of the space in the minds of the people. While the United Nations had nominated a Jewish, Arab, and international partition to Palestine in an attempt to divide the territory in a fair manner, it was not a legitimate or relevant solution to the people. Instead, war settled the disagreement over the meaning of the space, where two steadfast belief systems clashed. At the conclusion, neither the Arab state in Palestine, nor the international zone existed any longer. The Jewish state of Israel accepted the Partition Plan and received recognition as a nation-state, but an enduring conflict of identity and meaning persisted.

Jews of different backgrounds received the creation of the state of Israel with mixed emotions. Certain Ultraorthodox Jews, for instance, initially opposed what was seen as a blasphemous creation of the Jewish state in Palestine. There was disagreement between the political Zionists who felt strongly that Israel had the right to speak for Jews everywhere, while others emphasized the practical importance of the new Jewish state's relationship with the Jewish diaspora for its continued existence. The Zionist leaders accepting the Partition, followed by the armistice lines of 1948, were viewed by an extreme group of Zionists as a betrayal to the initial, larger area of desired territory for Israel.[68] The continued Jewish and Israeli disagreement was exceeded in turmoil only by the more trying state of the Arab Palestinians.

[68] Yapp, 289-90.

The War of Independence left masses of Arabs from the Palestinian Territory in a precarious situation – refugees and a potential nation of people with no home. The events of the war purged 700,000 Arab Palestinians from their homes to nearby Arab states and their struggle for identity and survival faced greater challenges. [69] In the 1950s, the monarchy of Jordan sought to eliminate the identity of "Palestinian," even forbidding the use of the term in official documents, closing political parties, and institutions.[70] With the dissolution of the United Arab Republic, an attempt to restore a sense of Pan-Arabism in the Middle East, many Palestinians relinquished their desires and increasingly began to identify as Jordanians. Then, in 1964, that transition was interrupted with the creation of the Palestine Liberation Organization, which restored the notion of Palestinian identity. The Palestine Liberation Organization continued the existential battle for the continued desire of statehood for the Palestinian people, now in the face of resistance from Jordan. For years, the monarchy of Jordan would contest this new adversary over the loyalties of the Palestinian Arabs. The confrontations were violent and ultimately ended in the forced removal of the Palestine Liberation Organization from Jordan.[71]

The region remained embroiled in conflict until the Six-Day War of 1967, when Israel was attacked by a coalition of Arab States. After the Arab coalition formed and threatened along the Israel border, Israel assumed the offensive and routed its foes (See Figure 12). What appeared to be another potential Holocaust for the Jewish people quickly turned into euphoria as the Israel Defense Forces defeated an Arab coalition of the Egyptians in the Sinai and Gaza Strip, the Jordanians in the West Bank, and the Syrians in the Golan Heights. Israeli nationalism grew as

[69] Yapp, 301.

[70] Ibid., 298-99.

[71] Yapp, *The Near East Since The First World War, 298-299.*

Figure 12. Events Leading to the Six Day War (25-30 May, 1967). Israel Ministry of Foreign Affairs, accessed 1 March, 2018, http://www.mfa.gov.il/mfa/aboutisrael/maps/pages/israel%20-in%20maps.aspx.

reports from the battlefield informed the Jewish people of the capture of historically symbolic landmarks and sites of Old Jerusalem such as the Temple Mount and the Western Wall.[72]

Within only six days, Israel found itself in possession of the entirety of the Palestinian Mandate territory, as well as the Golan Heights from Syria, and the Sinai Peninsula from Egypt.[73] In possession of an even greater amount of territory, the debate within Israel turned to what to do with the land. Three possibilities existed: return all of the land in exchange for a peace settlement, maintain all of the seized territory, or most of the areas while maintaining some for security purposes such as the Golan Heights. Multiple ideologically diverse groups within Israel supported different options. Only a minority supported returning all land, the extreme Zionists supported the retaining of all territories to fulfill the original Zionist desire, and the majority of the government supporting the balanced approach.[74] Ultimately, Israel retained all of the seized territories as no peace negotiation could be reached. Compared to the balanced approach of the Partition Plan, and keeping in mind the Arab belief of identity with the land, the post-Six Day War control of territory only represented a further imbalance.

In the years that follows the Six-Day war of 1967, some Jewish people further entrenched their interpretation of the space, shaping it to create a Hebrew map of the area. This included renaming some of the lands and replacing Arabic street signs with Hebrew ones honoring Zionist leaders.[75] In contrast, Arabs sought to restore the historically Arab Map of pre-1948 consisting of their own "sacred geography" directly at odds with the intent of the Jewish people.[76] Symbols in the old city of Jerusalem and across Israel could be transformed to claim either Israeli or

[72] Shlomo Gazit, *Trapped Fools: Thirty Years of Israeli Policy in the Territories* (London: Frank Cass Publishers, 2003), 3-6.

[73] Yapp, 418.

[74] Ibid., 419-21.

[75] Lefkowitz, 42.

[76] Benvenisti, 43-46.

Palestinian identities.[77] The battle for identity takes many forms; conflict over the symbolic meaning of space can manifest in something as innocuous as changing a street sign, or as overt as large scale combat operations. Since the Six-Day war, and multiple wars and conflicts later, this conflict of meaning of the space in Israel/Palestine still persists.

Viewing a contemporary political map of Israel presents the state with a neat appearance of sovereignty through a clearly marked border (see Figure 13). One views this type of map too often as an objective representation of the environment, and not a negotiable interpretation of the space reflected of its historical and social aspects. As this review of the many maps of Israel and Palestine demonstrates, this appearance is deceiving. A synthetic visualization of cognitive maps, reflecting many interpretations, is needed to understand the meaning of the space. In viewing a cognitive map, it reveals the complexity of the border that persists today.

[77] Lefkowitz, 26.

Figure 13. Political Map of Israel (2018). Central Intelligence Agency, accessed 1 March, 2018, https://www.cia.gov/library/publications/resources/cia-maps-publications/.

There are many different interpretations amongst Jews as to where the border should be, and why. Just as well, there are conflicts amongst Arabs as to what the strategic end state regarding a solution should be. The Palestinian Authority, for example, acknowledges the contention of borders and made the following statement in 2014: “Our national movement once laid claim to its rights over all of historic Palestine, an area that includes modern day Israel. Since 1988, however, in the interest of achieving peace and ending the conflict, we limited our national aspirations to statehood to 22 percent of historic Palestine, seeking a state of our own in the West

Bank and Gaza Strip, with East Jerusalem as its capital."[78] This message, promising as it is, notably conflicts with a 2018 photo taken by the Palestinian Authority Minister of Education. The photo depicts the Education Minister meeting with students and in the background, on the classroom wall, hangs a map of Palestine. This map omits Israel entirely, presenting a strong ideologically skewed interpretation to Palestinian children (see Figure 14 for an ideological, Palestinian Authority Map).[79] Different perspectives persist today, and one must understand the conflict resident in the space when visualizing it.

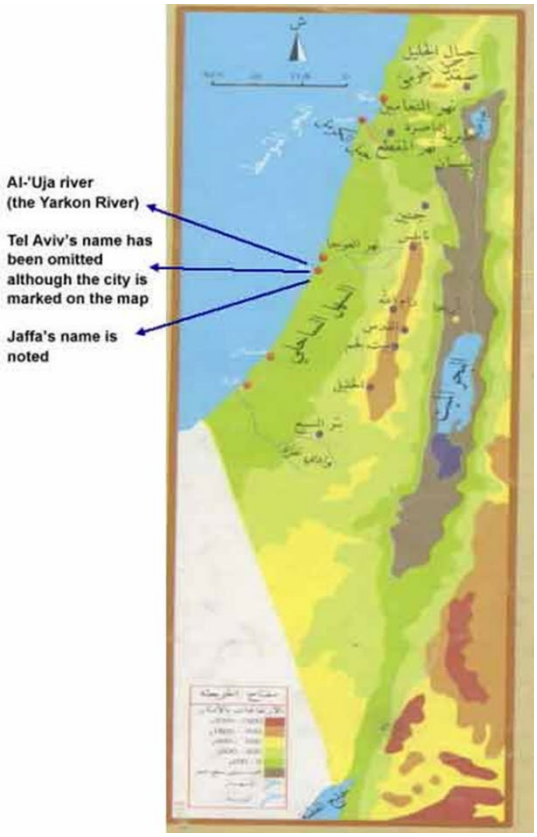

Figure 14. Palestinian Authority Map Omitting Israel. Jewish Virtual Library, accessed 1 March, 2018, http://www.jewishvirtuallibrary.org/palestinian-maps-omitting-israel.

[78] Palestine Ministry of Foreign Affairs State of Palestine, "Fundamental Issues - Borders," last modified 9 March, accessed 1 March, 2018. http://www.mofa.pna.ps/en/borders/.

[79] Palestinian Media Watch, "Map hanging on wall in PA school presents all of Israel and the PA areas as "Palestine"," accessed 1 March, 2018. http://www.palwatch.org/pages/allmaps.aspx.

In this case, a cognitive understanding of the multiple paradigms reveals a much more complex function of borders that surround Israel. A cognitive map shows the many interpretations by interested actors and where conflict may arise from this disagreement. The Sykes-Picot Agreement, the Balfour Declaration, and the UN Partition were all political borders drawn with different interests in mind that added complexity to this space by giving different understandings to different actors. That contradiction is overlaid on a map with the cultural and religious meanings in the space as visualized by the ancient 12 Tribes of Palestine or the World Zionist Organization desired border. Each of these borders are present in the minds of the actors in this space, which make them just as real a consideration needed for an environment as any physical feature. Together, they reflect the complex layering of interpretations that reside in a single space (see Figure 15). Through understanding the nature of the conflict, one gains a better appreciation for the complexity of the problem. Only then can one think about developing real solutions.

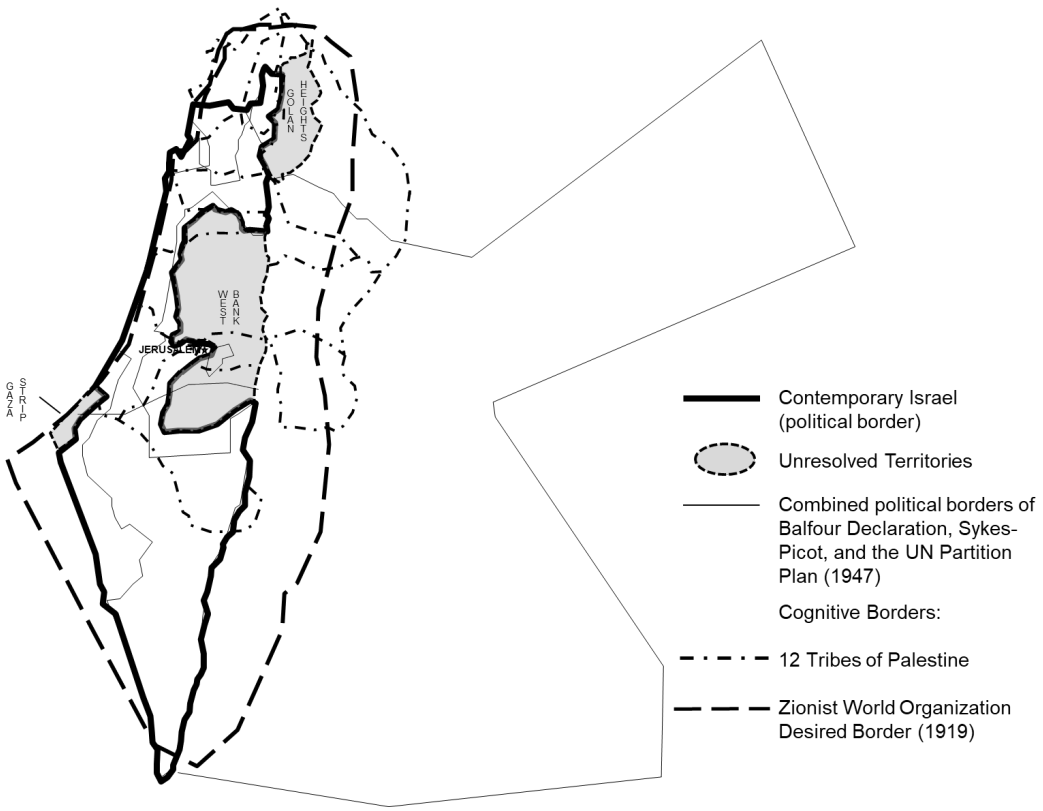

Figure 15. Cognitive and Political Borders of Israel. Source: author.

A Cognitive Advantage in Operational Art: Use a Different Compass

It is unavoidable for a commander to bring his own biases into the cognitive approach in conducting operational art. This is true of any commander from any social background. The advantage does not lie in any one mental model or cognitive process, but rather in the understanding of many. Understanding multiple alternate paradigms - those that shape other actors' actions in time and space, giving those actions logic and explaining possible strategies - exposes one's self to the contrasting interpretations of space in an operational environment. Many paradigms beyond one's own are at play during war and they heavily influence the actions of other actors in the operational environment. Incorporating many understandings of the elements of physical space, to include borders, and all elements of the operational environment will lead to a more sound understanding of one's environment, an improved visualization, and better approach.

A US Commander uses a paradigm, shaped by western history and culture, to ascribe meaning to all things including borders. He sees them as fixed elements of the international order to protect in order to preserve the sovereignty of states. The United States sitting atop the post-Westphalian order of international relations sees borders as instruments that maintain the status quo – this is in the interest of the US military and its commander in the current international system. The United States, atop the power structure of the international order, is inclined to support the borders of that state as part of the international system that supports the supremacy of the United States.[80] Reflective thinking, however, would enable understanding, to include the provocative paradigm of an enemy commander.[81] When a commander understands multiple paradigms that exist in his operational environment, he is armed with understanding, and understanding is a much better means to success than judgment.

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[80] John Ikenberry, *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order After Major Wars* (Princeton, NJ: Princeton University Press, 2001), 3-10, 164-70.

[81] Dewey, 13.

US Army Doctrine similarly describes borders in this limited nature, describing the importance of protecting borders in the conduct of operations.[82] The Intelligence Preparation of the Battlefield manual describes borders as a matter of seeing them as an obstacle to traffic illicit materials or fighters across to conduct their own operations.[83] Borders serve the United States interests, but it is not the case in other cultures across the world. One must consider alternate paradigms to understand the cognitive structure of borders to all actors in an operational environment. The study of human thought and the surrounding social context, absent of judgment, as perceived by these varying actors, provides different meaning to borders through their respective paradigms.

A US commander's paradigm acts as his compass in how he will navigate the cognitive dimension of his operational environment. This compass was forged by his beliefs that have come about over a lifetime of thought, use of mental models, and meaning-making of the world. One may think of alternate paradigms, such as those of the Jews or the Arab Palestinians, as alternate compasses that would navigate the same operational environment in a different manner due to their different beliefs and the meaning they ascribe to the space. To understand an adversary or other actor's interpretation of the operational environment, a commander and his staff must explore their future operational environments with these alternate compasses.

[82] Department of the Army, *Army Doctrine Reference Publication (ADRP) 3-0, Operations* (2017), 3-13.

[83] Department of the Army, *Army Techniques Publication (ATP) 2-01.3, Intelligence Preparation of the Battlefield/Battlespace* (2014), 7-9-7-10.

Conclusion

People from different cultures think differently which results in different beliefs and interpretations of the world. When different paradigms collide in conflict, this contrast of understanding plays out in the cognitive dimension as fog and friction. Mirror-imaging results in poor assumptions about the other actors and these poor assumptions lead to flawed strategies that fail to understand the true nature of the conflict. A military commander must seek out an advantageous position in the cognitive dimension to gain a superior strategy.

There is no single paradigm that is more advantageous than another. All cultures of people carry their own cognitive biases with them that limit understanding. When reading another actor's cognitive map, one must use that individual's cognitive compass. Using multiple compasses to inform a strategy accounts for the different ways people see this world. This is critical because these differences result in action and strategy of the other actors in an operational environment. In developing a more holistic strategy with realistic end states, one can better anticipate conflict, and ultimately identify where a resolution to conflict will be. That resolution may be found through manipulation of another actor's beliefs or action through deception, exploiting weaknesses, or in preventing an escalation of conflict altogether.

Returning to Clausewitz's game of cards, the commanders remain seated at the table, ready to begin play. With a new perspective, the US commander who understands the lens with which his opponent approaches the game, is in a superior position to defeat him. He can read his tells, he can call his bluffs, and he knows what is most important to his opponent and accounts for that in his own strategy. He is skilled at the game and all the more formidable because he also has the stronger hand, consisting of superior US military capabilities. The morning sun crests the horizon, and the fog of war begins to lift.

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Appendix A

The Sykes-Picot Agreement of 1916

It is accordingly understood between the French and British governments:

That France and Great Britain are prepared to recognize and protect an independent Arab states or a confederation of Arab states (a) and (b) marked on the annexed map, under the suzerainty of an Arab chief. That in area (a) France, and in area (b) Great Britain, shall have priority of right of enterprise and local loans. That in area (a) France, and in area (b) Great Britain, shall alone supply advisers or foreign functionaries at the request of the Arab state or confederation of Arab states.

That in the blue area France, and in the red area Great Britain, shall be allowed to establish such direct or indirect administration or control as they desire and as they may think fit to arrange with the Arab state or confederation of Arab states.

That in the brown area there shall be established an international administration, the form of which is to be decided upon after consultation with Russia, and subsequently in consultation with the other allies, and the representatives of the Shereef of Mecca.

That Great Britain be accorded (1) the ports of Haifa and Acre, (2) guarantee of a given supply of water from the Tigres and Euphrates in area (a) for area (b). His Majesty's government, on their part, undertake that they will at no time enter into negotiations for the cession of Cyprus to any third power without the previous consent of the French government.

That Alexandretta shall be a free port as regards the trade of the British empire, and that there shall be no discrimination in port charges or facilities as regards British shipping and British goods; that there shall be freedom of transit for British goods through Alexandretta and by railway through the blue area, or (b) area, or area (a); and there shall be no discrimination, direct or indirect, against British goods on any railway or against British goods or ships at any port serving the areas mentioned.

That Haifa shall be a free port as regards the trade of France, her dominions and protectorates, and there shall be no discrimination in port charges or facilities as regards French shipping and French goods. There shall be freedom of transit for French goods through Haifa and by the British railway through the brown area, whether those goods are intended for or originate in the blue area, area (a), or area (b), and there shall be no discrimination, direct or indirect, against French goods on any railway, or against French goods or ships at any port serving the areas mentioned.

That in area (a) the Baghdad railway shall not be extended southwards beyond Mosul, and in area (b) northwards beyond Samarra, until a railway connecting Baghdad and Aleppo via the Euphrates valley has been completed, and then only with the concurrence of the two governments.

That Great Britain has the right to build, administer, and be sole owner of a railway connecting Haifa with area (b), and shall have a perpetual right to transport troops along such a line at all times. It is to be understood by both governments that this railway is to facilitate the connection of Baghdad with Haifa by rail, and it is further understood that, if the engineering difficulties and expense entailed by keeping this connecting line in the brown area only make the project

unfeasible, that the French government shall be prepared to consider that the line in question may also traverse the Polgon Banias Keis Marib Salkhad tell Otsda Mesmie before reaching area (b).

For a period of twenty years the existing Turkish customs tariff shall remain in force throughout the whole of the blue and red areas, as well as in areas (a) and (b), and no increase in the rates of duty or conversions from ad valorem to specific rates shall be made except by agreement between the two powers.

There shall be no interior customs barriers between any of the above mentioned areas. The customs duties leviable on goods destined for the interior shall be collected at the port of entry and handed over to the administration of the area of destination.

It shall be agreed that the French government will at no time enter into any negotiations for the cession of their rights and will not cede such rights in the blue area to any third power, except the Arab state or confederation of Arab states, without the previous agreement of his majesty's government, who, on their part, will give a similar undertaking to the French government regarding the red area.

The British and French government, as the protectors of the Arab state, shall agree that they will not themselves acquire and will not consent to a third power acquiring territorial possessions in the Arabian Peninsula, nor consent to a third power installing a naval base either on the east coast, or on the islands, of the red sea. This, however, shall not prevent such adjustment of the Aden frontier as may be necessary in consequence of recent Turkish aggression.

The negotiations with the Arabs as to the boundaries of the Arab states shall be continued through the same channel as heretofore on behalf of the two powers.

It is agreed that measures to control the importation of arms into the Arab territories will be considered by the two governments.

I have further the honor to state that, in order to make the agreement complete, his majesty's government are proposing to the Russian government to exchange notes analogous to those exchanged by the latter and your Excellency’s government on the 26th April last. Copies of these notes will be communicated to your excellency as soon as exchanged. I would also venture to remind your excellency that the conclusion of the present agreement raises, for practical consideration, the question of claims of Italy to a share in any partition or rearrangement of turkey in Asia, as formulated in article 9 of the agreement of the 26th April, 1915, between Italy and the allies.

His Majesty's government further consider that the Japanese government should be informed of the arrangements now concluded.[84]

[84] The Avalon Project: Yale Law School, "The Sykes-Picot Agreement: 1916," accessed 1 March, 2018. http://avalon.law.yale.edu/20th_century/sykes.asp.

Appendix B

The Balfour Declaration

November 2nd, 1917

Dear Lord Rothschild,

I have much pleasure in conveying to you, on behalf of His Majesty's Government, the following declaration of sympathy with Jewish Zionist aspirations which has been submitted to, and approved by, the Cabinet.

His Majesty's Government view with favour the establishment in Palestine of a national home for the Jewish people, and will use their best endeavours to facilitate the achievement of this object, it being clearly understood that nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine, or the rights and political status enjoyed by Jews in any other country.

I should be grateful if you would bring this declaration to the knowledge of the Zionist Federation.

Yours sincerely,

Arthur James Balfour[85]

[85] The Avalon Project: Yale Law School, "Balfour Declaration 1917," accessed 1 March, 2018. http://avalon.law.yale.edu/20th_century/balfour.asp.