

Military Effectiveness:
Egypt During the October War

Kareem E.A. Korayem



University of
St Andrews

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Abstract

During the Six Day War, the world was surprised at how poorly Egyptian military performance was. In 1973, the world was again surprised at the improvements that were seen in the country's military performance during the October War. This paper seeks to understand which theoretical perspective is the most suited to explaining the country's performance during that war. With that goal in mind, this paper will summarize the main theoretical frameworks used to understand military effectiveness. Then, certain developments and incidents that occurred in Egypt's military performance and organization will be summarized and categorized under the specific theories that are best at explaining them. This paper finds that materialism explains most of the shortcomings of the Egyptian military, while civil-military relations are best suited to explain why Egyptian leadership took certain actions that resulted in failure.

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Introduction

Egypt has fought several wars with Israel since the founding of the state in 1948, and was outmatched in each of these wars. In 1973 on the other hand, “Israeli forces faced an Egyptian Army better led at the tactical level than they had known before,”¹ with another Israeli commander stating that “we are now dealing with a well-trained enemy, fighting with skill and dedication.”² Such were the descriptions of the Egyptian military given by Israeli commanders after the October War. The reason why these statements seem to have been uttered in puzzlement is because in 1967, during the Six Day War, the Egyptian military was easily routed, and was subsequently used as an example of abysmal military performance. This drastic change gives rise to the question, what influenced the performance of the Egyptian army during the October War? This paper finds that the most successful improvements occurred in the strategic planning of the war, with material factors holding back further success, and tactical maneuver remaining a severe weakness.

There are many different interpretations as to what exactly affects the military performance of any given state. These explanations vary, ranging from culture and regime type, to material endowment and civil-military relations. Despite the wide range of analyses conducted on military effectiveness, the clear majority of them are quantitative case studies focused on specific theories. While other studies have examined a small number of cases with a focus on single theories. There have not been many studies carried out on a limited number of case studies with the goal of evaluating the existing theoretical literature in the field. That is where this paper aims to contribute.

Primarily, this paper seeks to understand the role played by material factors on military effectiveness. Do other factors play a larger role, or can material endowment alone explain Egypt’s military performance?

This paper will determine which theoretical perspective provides the greatest explanatory value for the change that has been seen in Egypt’s military. It will do this by assessing the improvements that have occurred through the lens of different theoretical frameworks to determine which one is best at helping us understand the changes that occurred. This will allow us, not to eliminate and dismiss any of these perspectives and frameworks, but to understand which ones have the greatest explanatory value for this specific case study. And potentially lead the way for future studies with a larger scope that encompasses more cases studies to verify the findings of this paper. This will hopefully lead to a stronger ability to assess military effectiveness that is applicable to all states in the international system, and not just a class or category of states. It appears that the theories that seem to contribute the most to explaining Egypt’s military performance in 1973 are civil-military relations theories, as well as materialist explanations.

Most of the literature surrounding military effectiveness, especially regarding the performance of Arab militaries, have been focused on specific theoretical explanations. These include Pollack’s focus on cultural aspects specific to Arab societies to explain their military

¹ Chaim Herzog. *The War of Atonement: The Inside Story of the Yom Kippur War*. Philadelphia, PA: Casemate, 2009, 274.

² Avraham Adan. *On the Banks of the Suez: an Israeli General’s Personal Account of the Yom Kippur War*. Novato: Presidio Press, 1991, 95.

ineffectiveness,³ Biddle's focus on skill and the adoption of the 'modern system' to explain Iraq's poor showing during the Gulf War,⁴ and finally, Brooks' focus on civil-military relations in Egypt as the deciding factor in that country's military performance.⁵ Though these methods are highly valuable to explain single factors and to justify the use of a specific theory or framework, they neglect to comprehensively evaluate the other approaches that exist. As such, this paper will evaluate the changes seen in Egypt's military performance between 1967 and 1973 through the four main frameworks that are used to understand what causes military effectiveness; regime type, civil military relation, culture and society, or material endowment.

The ability to understand military effectiveness is a very important issue in international relations. There have been many studies that examine the causes behind the outbreak of war, but the actual performance of states during wars has been relatively neglected. The military capability of a state, is believed to influence a myriad of different aspects of inter-state relations. Military effectiveness impacts the relative strength of a state and can influence the resolution of disputes, cooperation with other states, policies on trade, the construction of identities within the state, economic development, and the initiation of war and its termination.⁶

Understanding the factors that influence military effectiveness would not only lead to improved military preparation, but also can prevent war. The reason why it is important to understand how a state might perform in war is because it has been noted that most wars are started by states that have over-estimated their own capability while underestimating their adversaries'. This misjudgment can be ameliorated if states had a better method of understanding their own military strength relative to other states. As such, if we are better able to determine the causes of military effectiveness, we might be better able to quantify state strength, and thus reduce the likelihood of a miscalculation of power and the likelihood of war.⁷ The goal to accurately evaluate a state's strength is exactly what this paper and others like it seek to achieve.

³ Kenneth Pollack M. *The Influence of Arab Culture on Arab Military Effectiveness*, Ph.D. dissertation. Massachusetts Institute of Technology, 1996.

⁴ Stephen Biddle. "Victory Misunderstood: What the Gulf War Tells Us about the Future of Conflict." *International Security*, vol. 21, no. 2, 1996, pp. 139 – 179.

⁵ Risa Brooks. "An Autocracy at War: Explaining Egypt's Military Effectiveness, 1967 and 1973." *Security Studies*, vol. 15, no. 3, 2006, pp. 396-430.

⁶ Beckley, Michael. "Economic Development and Military Effectiveness." *Journal of Strategic Studies*, vol. 33, no. 1, 2010, pp. 45.

⁷ Beckley, 46.

Literature Review

There are many theories that elucidate on the causes behind military effectiveness. Traditionally, theories that are concerned with a state's military power have been the domain of materialist scholars.⁸ This focus on the material capability of a state to rate its strength in a conflict has resulted in some puzzling occurrences, in which a state's resources did not correlate to either victory or defeat on the battlefield. Scholars have noted that attempting to predict the outcome of a war by observing the material capability of a state would be no more accurate than flipping a coin.⁹ This inconsistency has resulted in a number of theories assessing military effectiveness beyond materialistic frameworks.

This section will list the different theoretical explanations that can be used to understand why a state might be effective or ineffective militarily. These theories must be able to explain Egypt's military performance during the October War, while also being able to explain the country's shortcomings as the war progressed. In later chapters, these theories will be used to assess the country's military performance to understand which ones provide the greatest explanatory utility.

Explaining Military Effectiveness

Before listing the different theoretical perspectives concerned with military effectiveness, a brief overview of literature concerned with issues other than quantitative and qualitative factors of military effectiveness will be carried out. This will include Biddle's 'modern system' of force employment which details many tasks that a military needs to be able to carry out for it to function effectively.¹⁰

Some have highlighted the importance of command in military structure, which refers to the authority that an individual possesses to direct and coordinate forces in the field to overcome the problems of chance, friction and the fog of war.¹¹ The idea of command also refers to commanders being agile and responsive, as opposed to being an overly bureaucratic system

⁸ John J. Mearsheimer. *The Tragedy of Great Power Politics*. New York: Norton, 2001; See Stephen Biddle. *Military Power: Explaining Victory and Defeat in Modern Battle*. Princeton University Press, 2006. For an overview of this point.

⁹ Biddle, *Military Power*, 21-24; Ivan Arreguín-Toft. *How the Weak Win Wars: A Theory of Asymmetric Conflict*. Cambridge University Press, 2008; Steven Rosen, "War Power and the Willingness to Suffer", Edited by Bruce Russett. *Peace, War, and Numbers*. Sage Publications, 1972, 167-84.

¹⁰ Stephen Biddle. "Victory Misunderstood: What the Gulf War Tells Us about the Future of Conflict." *International Security* vol. 21, no. 2, 1996, 141. For a discussion of the critiques of Biddle's assertion that skill, in combination with technology, played a vital role in the Coalition's lopsided Victory over the Iraqi Army in 1991 with a surprisingly small number of casualties, see: Stephen Biddle. "The Gulf War Debate Redux: Why Skill and Technology are the Right Answer." *International Security*, vol. 22, no. 2, 1997, 163-74; Stephen Biddle. *Commentary on "Victory Misunderstood"*. Institute for Defense Analyses, 1997. For critiques of Biddle's 'Modern System', see the special issue of the *Journal of Strategic Studies*, Volume 28, Issue 3.

¹¹ Eitan Shamir. *Transforming Command: The Pursuit of Mission Command in the U.S., British, and Israeli Armies*. Stanford University Press, 2011, 8-10.

that limits initiative. Others have identified the role of culture in the adoption of new technologies,¹² or the method by which militaries can carry out maneuvers on the operational level in the battlefield.¹³

Biddle, a prominent scholar in military effectiveness, has argued that the most important determinant of a state's military effectiveness is its ability to adopt the 'modern system' of force employment effectively, both while on the offensive and the defensive.¹⁴ Force employment refers to the way that militaries utilize their personnel, materiel, and technology through tactics and doctrine, training, and force structure during combat. The system relies on complex tactics by soldiers in which they use "a tightly inter-related complex of cover, concealment, dispersion, suppression, small-unit independent maneuver, and combined arms at the tactical level, and depth, reserves, and differential concentration at the operational level of war."¹⁵ Biddle has convincingly argued that the modern system of force employment is the best method by which a state can enhance its military effectiveness.¹⁶

Materialist Views of Military Effectiveness

Materialist theories have traditionally been closely associated with the study of military strength in international relations. Most studies that assess a state's military strength, have traditionally been based on the quantity and quality of the resources that a specific state has at its disposal. To quantify a state's military strength, this method has most commonly used data such as the defense budget of the state, the number of soldiers it has at its command, industrial development, gross domestic product (GDP), and population.¹⁷ Another factor that lies within the purview of materialist conceptions of military effectiveness, is the change in external threat that a state faces. As a threat rises or becomes more threatening, the state might alter its military tactics, organization, strategy etc. accordingly to face this threat as efficiently as possible.¹⁸

Economic measurements are one of the most common methods to assess a state's military strength. There are various ways to measure the size of a state's economy, including GDP

¹² Dima Adamsky. *The Culture of Military Innovation: The Impact of Cultural Factors on the Revolution in Military Affairs in Russia, the US, and Israel*. Stanford University Press, 2010.

¹³ Shimon Naveh. *In Pursuit of Military Excellence: The Evolution of Operational Theory*. London, Frank Cass, 2005.

¹⁴ Biddle, Military Power; Stephen Biddle. "Military Power: A Reply." *Journal of Strategic Studies*, vol. 28, no. 3, 2005, 453-69; Stephen Biddle. "Strategy in War." *PS: Political Science & Politics*, vol. 40, no. 3, July 2007, 461-66; Stephen Biddle and Jeffrey Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy*. Carlisle Barracks, Strategic Studies Institute, US Army War College, 2008.

¹⁵ Biddle, Military Power, 3.

¹⁶ Biddle, Military Power; Stephen Biddle. "Rebuilding the Foundations of Offense-Defense Theory." *The Journal of Politics*, vol. 63, no. 3, 2001, 741-74.

¹⁷ Beckley, Economic Development and Military Effectiveness, 43; For realist scholars who utilize materialist modes of assessing state power, see: Edward H. Carr. *The twenty years crisis: 1919-1939. An introduction to the study of international relations*. New York: Harper & Row, 1964, 109-132; Hans J. Morgenthau. *Politics among nations: the struggle for power and peace*, 4th ed. Knopf, 1967, 106-144; Mearsheimer, 55-82.

¹⁸ Theo Farrel. "World Culture and Military Power." *Security Studies*, vol. 14, no. 3, 2005, 457.

and GDP per capita measurements. GDP measurements are usually carried out through market exchange rates or alternatively, they can be measured according to purchasing power parity (PPP). Measuring a state's economy using PPP measurements is not a good indicator of that state's economic development, as it is more suited at measuring living standards rather than military strength.¹⁹

Simple GDP measurements are another way by which one can assess a state's military strength. GDP however, as is also the case with PPP measurements, is not the most accurate method either. The reasons for this is that by focusing on a state's GDP growth, one tends to conflate growth with economic development.²⁰ GDP measurements indicate nothing more than the size of an economy, and as has been pointed out, "aggregating a lot poor people into one economy does not make it capable of generating power internationally."²¹ Beckley has argued for using "the degree of economic development - not just the size of its economy" as the ultimate standard for assessing a state's military strength.²² Economically developed states generally tend to possess more sophisticated equipment and are more able to maintain them effectively. The implication of this view is that a state cannot simply purchase advanced weaponry and thus possess a powerful military if it does not have a sophisticated and well developed economy. States require advanced and technologically developed economies to be able to innovate and produce weapons independently.²³ According to this view, Egypt's GDP per capita should be lower than Israel's by a significant degree, to be able to explain the country's shortcomings.

Among the different theories that help explain a state's military effectiveness is the 'human capital' theory. This theory holds that developing countries are at a military disadvantage when facing more developed states in combat, as poorer states tend to possess a smaller educated population, and lacks the sophistication and capability needed to use modern weaponry effectively.²⁴ This theory arguably falls under the materialist views of military effectiveness, as it concerns the human resources at the disposal of a state. This view should have us see that Egypt suffered from a deficiency in human capital in the war.

Another common technique of measuring a state's military strength is by calculating the total amount of military spending divided by the number of soldiers enlisted in a state's military.²⁵ This method allows us to calculate the amount of resources that a state dedicates to its individual soldiers. This method allows us to quantify the quality of a state's soldiers.

Materialist theories of military effectiveness argue that culture plays an insignificant role in a military's combat effectiveness. This is because a state that exhibits military effectiveness is emulated by others who adopt the successful state's military practices. As such, it is argued

¹⁹ Stephen G. Brooks, and William C. Wohlforth. *World Out of Balance*. Princeton University Press, 2010, 40-42.

²⁰ Shaun Breslin. "Why growth equals power – and why it shouldn't: constructing visions of China." *Journal of Asian Public Policy* vol. 1, no. 1, 2008, 3.

²¹ Brooks and Wohlforth, 40.

²² Beckley, 44.

²³ Keith Krause. *Arms and the State: Patterns of Military Production and Trade*. Cambridge University Press, 1992, 21.

²⁴ Stephen Biddle and Robert Zirkle. "Technology, civil-military relations, and warfare in the developing world." *Journal of Strategic Studies*, vol. 19, no.2, 1996, 171-212.

²⁵ Beckley, 52.

that the international system will determine the doctrine, tactics, and military practices, regardless of culture or regime type, as over time, all states will be socialized and adopt the most effective military practice. Eventually military practices will homogenize and negate the effect of other variables.²⁶

Civil-Military Relations

Advocates of the ‘civil-military relations’ approach argue that states with harmonious civil-military relations tend to field effective militaries, while those that have poor civil military relations tend to eschew the adoption of what has been termed as ‘conventional war practices’ and thus tend to fare much worst on the battlefield.

Conventional war practices have been defined as consisting of 4 main parts²⁷:

- Promotion based on merit,
- Realistic and regular training,
- Command arrangements that devolve some decision making to officers on the ground, and
- Information management that seeks to facilitate internal communications, both vertically and horizontally.

One reason why a state might not adopt these practices is the fact that implementing practices aimed at making the military more effective, is financially costly. A state that does not face an external threat might therefore not seek to implement such methods.

States facing an external threat might still decide not to implement conventional war practices. This is due to the belief by the regime that it faces greater threats from military coups, than it does from external foes.²⁸ In addition it has been argued that in cases where a state faces possible external threats and coups simultaneously, it will select to protect against coups over external threats. This choice is made because coups are considered to be “the ultimate offense-dominant domestic weapons: they occur quickly and afford tremendous and potentially total rewards to first movers.”²⁹ As such, if a regime faces internal threats of possible coups, it might adopt practices that would make its military less capable of carrying out a coup, and simultaneously make it less effective against external foes. This can be regarded as the opposite of conventional war practices by the fact that promotion becomes

²⁶ Barry Posen. *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars*. Cornell University Press, 1984, 75; Kenneth Waltz, *Theory of International Relations*. Random House, 1979, 124-128; João Resende-Santos. "Anarchy and the emulation of military systems: Military organization and technology in South America, 1870–1930." *Security Studies* vol.5, no. 3, 1996, 193-260.

²⁷ Caitlin Talmadge. *The Dictators Army: battlefield effectiveness in authoritarian regimes*. Cornell University Press, 2015, 12 – 15; For greater overview of command structures and their effect on military performance, see, Eitan Shamir. *Transforming Command: The Pursuit of Mission Command in the U.S., British, and Israeli Armies*. Stanford University Press, 2011.

²⁸ Quinlivan, “Quinlivan, James T. “Coup-Proofing: Its Practice and Consequences in the Middle East.” *International Security*, vol. 24, no. 2, 1999, pp. 131–165; Biddle, technology, civil military relations, and warfare in the developing world.

²⁹ Talmadge, 19; for an overview of the concept of offense and defense dominance see Jervis, Robert. "Cooperation under the Security Dilemma." *World Politics* vol. 30, no. 2, 1978, 167-214.

opposed to merit, training is heavily restricted, command arrangements become highly centralized, and information management becomes restrictive and limits horizontal and vertical communication between units.³⁰ If this theory is to hold explanatory weight, then we should see that Egypt has either improved or deteriorated in its ability to adopt conventional war practices.

Biddle and Zirkle have made an example of this phenomena by identifying the weakness of the Iraqi army, which was caused by poor civil-military relations within the state. Saddam Hussein's fear of political violence by his own military resulted in incentives to hamper the Iraqi army's military effectiveness and thereby reduce the chances of a coup.³¹ Brooks has also, blamed the poor performance of the Egyptian military in the Six Day War on the antagonistic relationship between President Nasser's civilian regime and the Egyptian military command. She credits the strengthened civilian control under President Sadat, for the improvement in Egypt's military a few years later during the October War.³²

Huntington has also convincingly argued that what matters most regarding military effectiveness, is whether a state is institutionally strong and stable. If regime type – democratic vs autocratic - is considered to lay on a linear spectrum, then Huntington reasons that on either end of that spectrum, one will find “strong, adaptable, coherent political institutions”. Meanwhile, states that lay in the middle of that spectrum have “little power, less majesty, and no resiliency.”³³ This argument would imply that states with strong political institutions and well-established regimes are more effective militarily than states with weak political and institutional establishments.

The above arguments show that states that are politically fragmented and institutionally weak and face internal threats of military coups, adopt practices that reduce the military's ability to threaten the regime itself. It will however also reduce the military's own ability to fight effectively. In essence, poor civil-military relations result in states being unable to effectively adopt the modern system of force employment as described by Biddle.³⁴

For civil-military relations to sufficiently explain Egypt's military effectiveness, it must be able to explain the country's success and failures in terms of meritocratic promotions, training, and officer appointments. Additionally, it must be able to explain these changes as occurring because of changes in civil-military relations, and not because of other variables.

Regime Type and Culture

³⁰ Talmadge, 17.

³¹ Biddle, "Technology, civil-military relations, and warfare in the developing world.", 173.

³² Risa Brooks "Civil-Military Relations and Military Effectiveness: Egypt in the 1967 and 1973 Wars." *Creating Military Power: The Sources of Military Effectiveness*, Edited by Risa Brooks, and Elizabeth A. Stanley, Stanford University Press, 2007, 106-135

³³ Samuel P. Huntington. *Political order in changing societies*. Yale University Press, 1968, 1-2.

³⁴ For more information of the effect of political institutions on military performance, see Deborah Avant. "Political Institutions and Military Effectiveness: Contemporary United States and United Kingdom." *Creating Military Power: The Sources of Military Effectiveness*, Edited by Risa Brooks, and Elizabeth A. Stanley, Stanford University Press, 2007, 27-54.

Many scholars have argued that democratic states are more militarily capable than non-democratic states. This idea was first thoroughly formulated by David Lake in his article, "Powerful Pacifists", published in 1992.³⁵ It is argued by democratic triumphalists that democracies are militarily superior to other states.

Democratic states are also believed to be more prudent when it comes to choosing which wars to participate in. This is known as the 'selection effect'. Reiter and Stam succinctly summarized the point which deserves to be quoted at length:

"Because democratic executives know they risk ouster if they lead their state to defeat, they will be especially unwilling to launch risky military ventures. In contrast, autocratic leaders know that defeat in war is unlikely to threaten their hold on power... Simply put, compared to other kinds of states, democracies require a higher confidence of victory before they are willing to launch a war..."³⁶

On the other hand, many scholars have claimed that the evidence regarding the superiority of democratic states in combat is inconclusive.³⁷ Desch has pointed out that the reason why democratic states might win more wars than non-democracies is not because democratic systems *cause* victory, but that victory is an *effect* of their material superiority. Wealthy states, he argues, are more likely to be democratic, and thus, win more wars might be because they are wealthy, not because they are democratic.³⁸

Reiter and Stam have also found that the relationship between regime type and military victory, when plotted on a graph, looks like a 'U', with one end of the U represents democracies, while the other end represents autocracies. States on either end of the 'U' perform well militarily, while states that are in between perform poorly.³⁹ This occurs because "the modern system requires high degrees of organizational capacity among political and military institutions",⁴⁰ something that states transitioning between democracy and autocracy do not possess. This finding suggests that it is the institutional strength of a state that results in militarily effectiveness, not regime type.

Others, such as Bennett and Stam, have found that democracies are indeed more likely to win a war in the short term. However, if a war drags on past 18 months, then it is more likely that the autocratic state will win the war. This is because autocratic states are more willing to fight long wars, while democracies are more willing to accept a draw or a loss if they find that a war is dragging on indefinitely. The reason for this is that a democratic state is more attuned

³⁵ David A. Lake "Powerful Pacifists: Democratic States and War." *American Political Science Review*, vol. 86, no. 1, 1992, 24-37.

³⁶ Dan Reiter, and Allan C. Stam. *Democracies at War*. Princeton University Press, 2002, 20.

³⁷ Risa Brooks A. "Making Military Might: Why Do States Fail and Succeed?: A Review Essay." *International Security*, vol. 28, no. 2, 2003, 149-91; Alexander B. Downes. "How Smart and Tough are Democracies? Reassessing Theories of Democratic Victory in War." *International Security*, vol. 33, no. 4, 2009, 9-51; Michael C. Desch. *Power and Military Effectiveness: The Fallacy of Democratic Triumphalism*. Johns Hopkins University Press, 2008; Alexander B. Downes. "Correspondence: Another Skirmish in the Battle over Democracies and War." *International Security*, vol. 34, no. 2, 2009, 194-204.

³⁸ Desch, 171-173.

³⁹ Reiter and Stam, *Democracies at War*, 32-33.

⁴⁰ Ryan Grauer and Michael C. Horowitz. "What Determines Military Victory? Testing the Modern System." *Security Studies* vol. 21, no. 1, 2012, 92.

to the popular opinion. This finding would imply that democracies only have a military advantage over autocracies in short wars, but are disadvantaged in long ones.⁴¹

Additionally, as democratic states represent large segments of their populations, they are less likely to face internal ethnic strife or class divisions, and as such, there is a reduced likelihood of internal violence and regime instability. Because of this, democracies might be better able to promote conventional war practices, such as skill development, training, and initiative in its soldiers. These skills might otherwise be suppressed in states where the regime fears internal instability, such as coups, over external threats from other states. According to this view, democracies are more capable of adopting the modern system of force employment.⁴² Another argument made Reiter and Stam, is that the lack of transparency in autocratic states might lead officers and commanders to misrepresent the extent of losses in a battle for fear of punishment. The result is poor information gathering, that inevitably leads to poor performance on the battlefield.⁴³

Among the explanations offered by scholars to clarify what determines a state's military effectiveness, is the role played by culture and society, and how these factors determine the combat effectiveness of a state's military.⁴⁴ culture has been defined by Pollack as being Pollack defines culture as being "the set of learned, shared values, patterns of behavior, and cognitive processes, developed by a community over the course of its history."⁴⁵ Rosen has argued that the use of material factors to determine a state's military capability can often be incorrect.⁴⁶ He claims that culture and society should not be used as the sole method of assessing a state's military effectiveness, but to ignore these variables all-together would distort any attempt to understand how a state will perform in a war. This is not an entirely new position to take, as Clausewitz in the 18th century, and Ibn Khaldoun in the 14th century, have both identified the important role that culture plays in how militaries fight their wars.⁴⁷

Kenneth Pollack, who has extensively examined the wars fought by several Arab countries, has also concluded that culture played a decisive role in their military failings. Pollack has

⁴¹ Scott D. Bennet, and Allan C. Stam. "The Declining Advantages of Democracy: A Combined Model of War Outcomes and Duration." *Journal of Conflict Resolution*, vol. 42, no. 3, 1998, 344-66.

⁴² Reiter and Stam, *Democracies at War*, 72-74; Dan Reiter and Curtis Meek. "Determinants of Military Strategy, 1903-1994: A Quantitative Empirical Test", *International Studies Quarterly*, vol. 43, No. 2, June 1999, 363-387.

⁴³ Reiter and Stam, *Democracies at War*, 23.

⁴⁴ For examinations of the role of nationalism in military effectiveness, see Ruth Benedict. *The Chrysanthemum and the Sword: Patters of Japanese Culture*. Houghton Mifflin, 1946; Dan Reiter. "Nationalism and Military Effectiveness: Post-Meiji Japan." *Creating Military Power: The Sources of Military Effectiveness*. Edited by Risa Brooks, and Elizabeth A. Stanley, Stanford University Press, 2007, 27-54.

⁴⁵ Kenneth, M. Pollack. *The Influence of Arab Culture on Arab Military Effectiveness*. Ph.D. dissertation, Massachusetts Institute of Technology, 1996, 37.

⁴⁶ Stephen P. Rosen. "Military Effectiveness: Why Society Matters." *International Security*, vol. 19, no. 4, 1995, 31.

⁴⁷ Ibn Khaldun, *The Muqaddimah: An Introduction to History*, Franz Rosenthal, Trans. (Princeton, N.J.: Princeton University Press, 1980) 11-12, 77, 251-264; Carl Von Clausewitz. *On War*. Edited and translated by Michael Howard and Peter Paret, Princeton Univerisity Press, 1976, 202-203.

found that Arab armies are not successful when they attempt to carry out maneuver warfare or mechanized warfare.⁴⁸ Even though he identifies the poor performance in mechanized warfare as being a common trait of underdeveloped countries, He argues that Arab culture plays a secondary role to this underdevelopment and becomes a significant factor in their inability to employ mechanized or maneuver warfare. He further states that “Arab culture was clearly the most important of a range of factors that collectively shaped the performance of Arab militaries on the modern battlefield.”⁴⁹

According to Pollack, Arab culture has negatively impacted military effectiveness in several different ways. As Arab society demands conformity from its members, it stifles originality and creativity. This might explain the poor tactical performance of Arab officers, especially when it comes to improvisation.⁵⁰ He also identifies the Arab conception of shame and honor as exacerbating their poor performance, as doing something “wrong is generally much worse than doing nothing at all.”⁵¹ This results in Arab officers refusing to act out of the fear that they might commit a mistake.

One of the problems with Pollack’s assumption that all Arab speaking states possess the same ‘dominant Arab culture’.⁵² This homogenizing view of the Arab world risks papering over the many differences between and amongst the different Arab countries, while embracing the belief that the Arab world is composed of a single society. In reality, many believe that the idea of a dominant Arab culture only came into being after European colonization, and later, with the independence of these Arab countries and the rise of nationalist and Arabist leaders, such as Abdel Nasser, who promoted the concept of Pan-Arabism. Before this period, most Arab states did not identify themselves with as belonging to a ‘dominant Arab culture.’⁵³

For cultural and regime type based theories to be of significant value, they must be able to explain Egyptian military effectiveness, or ineffectiveness, through cultural variables and regime type based explanations. In essence, changes in culture must be identified and convincingly seen to have altered the country’s performance. Democratic-autocratic rating for the country’s regime must also be significantly altered enough to explain improvements to the country’s military.

⁴⁸ Pollack, *The Influence of Arab Culture on Arab Military Effectiveness*, 32.

⁴⁹ Pollack, *The Influence of Arab Culture on Arab Military Effectiveness*, 33.

⁵⁰ Pollack, *The Influence of Arab Culture on Arab Military Effectiveness*, 49.

⁵¹ Pollack, *The Influence of Arab Culture on Arab Military Effectiveness*, 55.

⁵² Pollack, *The Influence of Arab Culture on Arab Military Effectiveness*, 44.

⁵³ John Chamberlin. *Imagining Defeat: An Arabic Historiography of the Crusades*. PhD dissertation, Naval Post-Graduate School, 2007.

Methodology

This paper aims to examine the changes that were witnessed in the performance of the Egyptian army between the 1967 and 1973 wars with Israel. To understand how the wars were carried out, general histories, along with autobiographies of some of the prominent Egyptian and Israeli generals who participated in the war will be examined. The autobiographies provide a unique and highly qualified insider view of the events of the war, the situation on the ground at the time, and how the events took place. The most important reason for the use of general histories and Israeli autobiographies is to make sure that we get a true and uncensored view of the Egyptian military's performance. This is doubly important when one considers the fact that Egypt was, and still is, an autocratic state that censors and regulates the publication of materials, and as such, not all Egyptian sources can be taken at face value. The general histories, on the other hand, provide us with an outsider view that is generally unbiased and encompassing of all the events of those wars.

Other than the accounts of the war, certain data will be used to accurately assess each country's standing. To appropriately examine Egypt's military effectiveness using a materialist framework, this paper will examine GDP, GDP per capita, defense spending, and defense spending per capita. These figures will be taken for the year before the war to properly ascertain the correct and complete figures. For the regime-type framework, the Polity IV data series will be used to properly classify both Egypt and Israel on an autocratic-democratic scale running from -10 to +10. Military effectiveness will be assessed, in one way, by using the loss-exchange ratio (LER), which is the attacker's casualties divided by the defender's casualties. Information regarding the status of the country's civil-military relations as well as the role of society and culture has been taken primarily from general history books and from autobiographies.

For the theoretical background that will frame this debate, dozens of books, and research papers have been consulted to provide a thorough understanding for the different explanations provided to elucidate on the causes of military effectiveness.

This paper will be organized as follows: The next section will include a general background to the events under examination, the wars of 1967 and 1973. The chapters following this will be divided by theoretical approach, which have been divided into three main categories: Materialist, civil-military, and culture and regime type explanations to military effectiveness. Each of these sections will contain sub-sections assessing the Egyptian military's performance in specific fields, such as in strategy, tactics, and quality of training through the lens of each of these theoretical approaches. This will be done to be better able to understand which theoretical approach, or combinations of approaches, has the most explanatory value when trying to understand Egypt's military performance. Finally, a conclusion will detail the findings of this paper, summarize what has been learned, and where future research might be most useful to understand the causes behind military effectiveness better.

Background to Events

Egypt and Israel have fought several wars since the founding of the state of Israel in 1948. They have been in armed conflict with each other in 1948, 1956, 1967, and 1973. This does not include the War of Attrition that occurred between the 1967 and 1973 wars, as it was not considered to be a full-scale conventional war. This paper will examine the October War, as Egypt's military performance vastly improved during that war in comparison to its disastrous performance during the Six Day War that took place in 1967, just a few years earlier. This section of the paper aims to provide a brief background to the 1967 and 1973 wars.

The Six Day War

In 1967, tensions between Syria and Israel was high and there were regular clashes along their border. In response to Syrian reports that Israel was mobilizing its military in preparation for an assault on Syria, Egypt began marshalling its army in a show of strength to deter the Israelis.⁵⁴

Even though the Egyptian army was in a poor state and not fit for a conflict with Israel, President Nasser decided to display their commitment to Syria by sending the Egyptian army to the Sinai to display its strength.⁵⁵ Israel didn't react to this show of force by the Egyptians, and Nasser decided to raise the stakes. He did this by placing a blockade on the Israeli port of Eilat and thereby blocking the transit of Israeli ships through the Straits of Tiran. And so, after some initial delay, Israel launched a pre-emptive attack on several of its Arab neighbors who have been amassing troops near its borders, including Egypt.⁵⁶

Israel opened the war by unleashing its air force against unprotected Egyptian aircraft sitting on the ground in Egyptian airfields, catching the Egyptians in complete surprise. As a result, when the Israeli air force went on the offensive, the Egyptians didn't react until it was too late. Out of 450 aircraft, the Egyptians lost 300, as well as 100 pilots.⁵⁷

After the start of the war, Field Marshall Amer reportedly suffered from a nervous breakdown, and began issuing contradictory orders to the different commanders in the field, sowing panic and confusion in the ranks. Eventually, after Israel launched its ground offensive, Field Marshall Amer ordered a mass evacuation of the Sinai. But the lack of coherent commands caused the officers to flee. With the men left to their own devices, the disorderly retreat became a disastrous route. They suffered from casualties ranging between 10,000 and 15,000 people, with another 5,000 taken as prisoners. The Egyptian military also lost 80% of their equipment, which they painfully admitted after the war. In contrast, the Israelis suffered 300 dead and another 1,000 wounded.⁵⁸

⁵⁴ Chaim Herzog and Shlomo Gazit. *The Arab-Israeli Wars: War and Peace in the Middle East from the 1948 War of Independence to the Present*. New York: Vintage, 2010, 148.

⁵⁵ Jeremy Bowen. *Six Days: How the 1967 War Shaped the Middle East*. New York: Thomas Dunne, 2005, 39.

⁵⁶ Bowen 46-94

⁵⁷ Chaim Herzog. *The War of Atonement: The Inside Story of the Yom Kippur War*. Philadelphia, PA: Casemate, 2009, 251; Pollack, Kenneth M. *Arabs at War: Military Effectiveness, 1948-1991*. Lincoln: University of Nebraska Press, 2004, 62.

⁵⁸ Herzog, Arab-Israeli Wars, 160-165

Egypt's military defeat in 1967 becomes even more shocking when one considers that President Nasser was aware that an Israeli attack was imminent. A few days before the Israeli assault, Nasser warned the military leadership that an attack was coming in two - three days. The Israeli attack came in two.⁵⁹

The 1973 War

After Nasser's death in 1970, his vice-president, Anwar Sadat, emerged as the new leader of the country. Sadat continued the reforms that were started under his predecessor following the 1967 defeat.

After reaching the opinion that they have exhausted all diplomatic options with Israel, President Sadat began planning for war. He felt that military action was needed to restart the negotiations from a position of strength, by challenging Israel's belief in its secure borders.⁶⁰ Thus, Sadat wished to carry out a limited offensive into the Sinai with the aim of capturing territory and upending the status-quo.

To maximize their chances at a successful offensive, the Egyptians worked out a plan to launch a joint surprise attack together with the Syrians. Syria's interest in this attack was to regain control of the Golan Heights, which they lost to the Israelis in the Six Day War. Under this plan, the Egyptian would attack Israel in the south, while the Syrians would attack in the north, into the Golan Heights.

In the lead up to the war, the Egyptian command understood that their air force was no match to the IAF. To make up for this short coming, the Egyptians relied on an extensive anti-air defense system along the west bank of the canal. The system consisted primarily of Soviet made SA-2s, SA-3s, and SA-6s.⁶¹ If the Israeli Airforce wanted to avoid these surface-to-air missiles (SAMs), they had to fly at a low altitude where they would become vulnerable to AAA guns, such as the ZSU-23.⁶²

The 1973 war began with 240 Egyptian aircrafts flying over to the East Bank of the Canal to target Israeli SAM batteries, command posts and administration centers, artillery positions, and radar stations. As the air assault began, about 1,900 direct-fire weapons and 2,000 artillery pieces opened fire along the length of the canal, targeting and suppressing the Israeli strongpoints which constituted the Bar-Lev line. Over 10,500 shells landed on the East Bank of the Canal in the opening minutes of the war, with a rate of 175 shells per second. The crossing of the Egyptian army was launched an hour after the bombardment began. Waves of infantry streamed into the Sinai, including tank-hunting teams that rushed past the Bar-Lev forts to reach a few kilometers past the canal where they disrupted Israeli armored reinforcements on their way to the canal and the Egyptian army.⁶³

⁵⁹ Risa Brooks. "An Autocracy at War: Explaining Egypt's Military Effectiveness, 1967 and 1973." *Security Studies* 15.3 (2006): 396-430.

⁶⁰ Hassan Al-Badri, et al. *Harb Ramadan*. Cairo: Al-Hay'a Al-Mirsiya Al-'Ama L'al-Kutab, 1987, 59-62.

⁶¹ Al-Badri, 64

⁶² Pollack, *Arabs at War*, 112.

⁶³ Al-Badri, 127-145.

The crossing of the canal was a significant success for the Egyptian military. Within 18 hours, over 90,000 men, 850 tanks, and a variety of another 11,000 vehicles had reached to the other side of the canal.⁶⁴ The number of Egyptian casualties were also much lower than expected. Egyptian planners expected that the army would sustain at least 10,000 deaths during the crossing. The actual tally was 208 dead, a number significantly lower than the planners anticipated.⁶⁵ After the crossing, Egyptian forces raced to secure the bridgeheads by installing defensive measures such as anti-tank mines, interlocking fields of fire from tanks, anti-tank guided missiles (ATGMs), mortars, and automatic weapons.⁶⁶

Initial Israeli counter-attacks during the first few days were unsuccessful, as Israeli forces were unprepared for the attack and the reserves were not yet mobilized. The Israeli counter-attacks were carried out by small and scattered units leading uncoordinated assaults against different sites of the Egyptian bridgeheads. The attacks were repulsed with heavy losses on the Israeli side, with the 252nd armored division losing 200 of its 300 tanks in the first 2 days.⁶⁷

As the battle progressed, Israel began to learn how the Egyptians conducted their forces during the war. Egyptian fighting tactics were easily identifiable by the Israelis because they fought with a strict and unvarying technique.⁶⁸ In fact, Egyptian “military spokesmen insist that there have been no departures from the plan, no improvisations and no unauthorized initiatives by local commanders.”⁶⁹ The Egyptian armed forces lost their momentum and advantage, and the tide of war began to change.

By the 10th of October, on the 4th day of the war, the northern front was swinging decisively in Israel’s favor. Syrian forces began to fall apart and Israel’s military started pushing into Syria proper and threatening Damascus itself.⁷⁰ Because of the Israeli offensive, Syria began to push its Egyptian ally to intensify its attack on the southern front. This was done with the hopes of drawing Israel’s attention to the south and thereby relieve the pressure put on the Syrians. In answer to this request, Sadat ordered the Egyptian forces to carry out the second phase of their operations. This entailed a push east towards the Sinai Passes which would take place on the 14th of October.

Egyptian commanders objected to this assault as they believed that it was not feasible, and that the plans for the Egyptian army to push east to the Passes “never made it off the drawing board,”⁷¹ and never meant to be put into action.⁷² Yet, Sadat continued to push for the offensive to take place regardless.

⁶⁴ Al-Badri, 30-50.

⁶⁵ Herzog, *The War of Atonement*, 155.

⁶⁶ Herzog, *The War of Atonement*, 191; Pollack, *Arabs at War*, 111.

⁶⁷ Pollack, *Arabs at War*, 112-113.

⁶⁸ Herzog, *The War of Atonement*, 199.

⁶⁹ Insight Team of the *London Sunday Times*. *The Yom Kippur War*. New York: Double Day, 1974, 221.

⁷⁰ Pollack, *Arabs at War*, 114.

⁷¹ Pollack, *Arabs at War*, 114.

⁷² Mohammad Hafez Ismail. *Amn Misr Al-Qawmy Fi ‘Asr Al-Tahadiat*. Markaz Al-Ahram L’al-Tarjamah W’al Nashr, 1987, 323.

Another error that was committed during the attack on the 14th of October was the decision by Egyptian command to utilize their operational reserves, consisting of the 4th and 21st armored divisions in the West Bank. Egypt would pay a high price for this error as the Israeli forces eventually carried out their own canal crossing operation. When the Israelis reached the west bank, there wasn't enough Egyptian forces to withstand them. The push to the Passes was a military disaster for Egypt. Their forces attacked in an unorganized manner and their attacks were easily counteracted and crushed by the Israelis.⁷³

As the tide of war continued to turn against the Egyptians, who already incurred severe losses and saw their 3rd Army at risk of complete encirclement by Israeli forces, President Sadat started to push for a ceasefire. The first ceasefire was announced on the 22nd of October, though both the Israelis and the Egyptian accused the other of violating it.⁷⁴ Another ceasefire was announced for the 25th of October and this time it was observed.

Though Egypt had lost more territory than it gained by the end of the war (1,200 square kilometers gained against 1,600 square kilometers lost)⁷⁵, it resulted in a diplomatic victory. In 1978 President Sadat and Prime Minister Begin met in Camp David in the US, and a framework for peace was agreed to. In 1979, they signed a peace treaty which ended a state of war that lasted between the two countries for over 30 years. In this treaty, Israel agreed to return the Sinai to Egypt, and in return Egypt agreed to recognize Israel as a legitimate state, among other provisions.⁷⁶

⁷³ Pollack, *Arabs at War*, 114-117.

⁷⁴ Heikal, Mohamed. *The Road to Ramadan*. New York: Ballantine, 1976. 254-262; Adan, 296-402.

⁷⁵ Adan, 441.

⁷⁶ Bernard Gwertzman. "Egypt and Israel Sign Formal Treaty, Ending a State of War After 30 Years; Sadat and Begin Praise Carter's Role." *The New York Times*. Accessed: 23 July 2017. <<http://www.nytimes.com/learning/general/onthisday/big/0326.html#article>>.

Civil-Military Relations

To reveal the role that politicized leadership has played in Egypt, the October War will be discussed in terms of improvements, the Egyptian deception campaign, and shortcomings during the war.

1973 – Improvements

After Egypt's defeat in the Six Day War and a failed coup, Nasser carried out a program to professionalize the military by dismissing about 800 officers who were believed to have been promoted based on their politics rather than their merits. Nasser even recalled many officers who were previously dismissed because their loyalty was not assured.⁷⁷ This resulted in the improved quality of Egyptian military leadership which led to improved military performance.

The Egyptian leadership understood that one of the biggest weaknesses that were displayed by the Egyptian army was its lack of ability to carry out maneuver warfare and to creatively take the initiative to respond to developments on the field as they occurred. Egyptian forces, on the other hand, were very capable of fighting static defensive battles. As such, the 1973 war was designed to cater to the Egyptian forces' strength and to limit their weaknesses. This was done by crafting an offensive that would rely mostly on defensive postures and tactics. The strategy devised called for an overwhelming attack to quickly overwhelm Israeli positions and then establish beachheads and secure their positions primarily with defensive weapons. They would then dig in and wait for the Israeli counter-attack to crash against hardened defensive positions, resulting in what Shazli referred to as a "meat grinder."⁷⁸ This strategic decision was also determined by the type of material equipment that the Egyptians possessed, primarily, their lack of an adequate air force.

Another case of the Egyptian leadership being able to pit its strengths against Israeli weakness can be seen in the strategy used for the canal crossing operation. Egypt knew that its much larger population was an advantage it maintained over Israel. This knowledge resulted in a strategy where Egypt's military attacked along the entire front of the canal without a specific point of assault. It was done in the hopes of confusing the Israeli leadership, which would delay its counter-attack as it waited for the location of the main assault. This is exactly what happened, as General Gonen delayed a major response for the first two hours as he attempted to identify where the main attack was going to come from. This delay in an Israeli counter-attack provided the Egyptians with a window to complete the first phases of the crossing and begin to establish defensive positions.⁷⁹

The Egyptians also benefited from the advantage of a joint attack with Syria. By being able to coordinate an attack with Syria, the attackers were able to stretch Israeli forces thin. In 1967, on the other hand, because of its initiative in carrying out a pre-emptive strike, Israel could

⁷⁷ Pollack, 89.

⁷⁸ Insight Team of the *London Sunday Times*, 60.

⁷⁹ Herzog, *The War of Atonement*, 150; Al-Badri, 67.

focus on the different fronts individually, allowing it to mobilize 120,000 soldiers on the Egyptian front before turning its attention to the other fronts.⁸⁰

The crossing operation itself was also a massively complex operation that required competent leadership to be carried out successfully. There were many obstacles involved in the crossing of the canal. These included the oil weapon, which consisted of oil tanks with pipes reaching down into the canal. In the case of a crossing, the oil would be released into the canal and set aflame. This oil barrier system had to be disabled without alerting the Israelis before the crossing could take place.⁸¹ The canal itself was also formidable barrier. Running 12 meters deep and 160-180 meters wide, with Israeli strong points positioned every 10-30 kilometers. Additionally, along the canal, the Israelis constructed sand ramparts 3-10 meters high, these ramparts obstructed the Egyptian view of the battle field from the West Bank, which necessitated the construction of even higher ramparts that ranged from 15-30 meters high on the Egyptian side of the canal to improve observation and fire trajectory.⁸² Finally, a method had to be devised to break down the Israeli ramparts to form gaps to allow tanks to cross the canal on pontoon bridges. The Egyptian leadership settled on the use of high pressure mobile water pumps to tear gaps into the sand barrier.

Another important leadership decision that taken in the lead-up to the 1973 war was the change in the education available to Egyptian officers. After 1967, the Egyptian command started encouraging officers to learn more about Israel, its society, military practices, and even language. These studies resulted in some conclusions about Israeli military thought that was used to plan the offensive across the canal, including Israeli belief in the disunity of Arab countries and their ability to coordinate an attack, and Israel's blinding confidence in its own military superiority. These insights into Israeli thinking resulted in improved strategic planning for the eventual canal crossing.⁸³ Under Nasser this type of study was banned with obvious negative implications to the military's performance.⁸⁴

The Element of Surprise

The ability of the Egyptian army to carry out a surprise attack on the 6th of October, provided immeasurable advantages in the opening stages of the war. The Egyptian and Syrian plans were so well concealed that the Israeli leadership learned about the attack only hours before it commenced. In fact, most Egyptian soldiers did not have any knowledge of the attack beforehand, with 95% of Egyptian POWs claiming to have been informed of the attack on the day it was to be carried out.⁸⁵

The Egyptians took several actions in the lead up to the war to confuse Israeli intelligence regarding their true intentions. To desensitize Israeli intelligence to Egyptian deployment before the war, Egyptian reserves were mobilized and demobilized 22 times between January

⁸⁰ Khalidi, Ahmed. "The Military Balance, 1967-1973." *Middle East Crucible: Studies on the Arab-Israeli War of October 1973*. Edited by Aruri, Naseer H., The Medina University Press International, 1975, 25

⁸¹ Edgar O'Ballance. *No Victor, No Vanquished: The Arab-Israeli War, 1973*. Presidio Press, 1997, 45; Herzog, *The War of Atonement*, 148; Al-Badri, 72.

⁸² Adan, 17-18.

⁸³ Al-Badri, 66-67.

⁸⁴ O'Ballance, 23.

⁸⁵ Herzog, *The War of Atonement*, 39.

and October of 1973. This allowed the Egyptian military to improve its mobilization system, and it allowed the final mobilization for the war to be overlooked. Additionally, to dispel any notions that the Egyptians were preparing for war, 20,000 reservists were demobilized on the 4th of October, 2 days before the war.⁸⁶

Another exercise in deception was a listing in the Egyptian state newspaper, Al-Ahram. On the 2nd of October, it stated that lists for officers who wanted to make the religious pilgrimage to Makkah, in Saudi Arabia, were now open. It was known at the time that the Israelis received a daily copy of the paper through Cyprus.⁸⁷ With officers apparently being allowed to go on leave for religious pilgrimage, the Egyptian leadership was signaling that conflict was not expected. The Egyptians also signaled their interest in resuming negotiations as late as the 28th of September when Arab envoys met US Secretary of State Kissinger to discuss this possibility.⁸⁸

The successes achieved by the Egyptian army were primarily thanks to the improved quality of leadership. The ability to carry out the complex canal crossing operation and the ability to identify their own weaknesses and strengths is testament to the improved civil-military relations in the country. Also, the ability of the Egyptian army to maintain secrecy of the crossing is a success in and of itself. As highlighted by Herzog, the Egyptian leadership was able to deceive the Israelis, all the intelligence services in the West, and the Egyptian army itself.⁸⁹

1973 – Shortcomings

Despite the improvements that were witnessed in the Egyptian army's leadership, the country was still institutionally weak. Reforms of the military and its officer corps began just a few years earlier, after the 1967 defeat. The Sadat regime was also faced with the threat of a coup 2 years before the war. Though Sadat struck first and had the conspirators arrested in May 1971,⁹⁰ the incident demonstrated the instability of the regime and the magnitude of the internal threat it faced. As such, there were still severe problems with the staffing of the Egyptian military's leadership, and thus also problems with the performance of the military.

The minister of war who was tasked with overseeing the operations of the war, Ismail Ali, was not well suited for the task. Ali was the chief of staff in the Sinai during the Six Day War and was dismissed afterwards for his role in the military's failure. He was welcomed back as Chief of Staff a few days later by Nasser, but was again dismissed in 1969 when an Israeli raiding force landed on Egyptian soil where it remained for a day without Ali's knowledge. After Sadat's ascension to power, he was selected to be the minister of war. Ali was, according to Shazli, increasingly indecisive, disliked by the troops, and was domineering. Despite his shortcomings, Ali was selected by Sadat to be the minister of war because he was considered to be politically reliable.⁹¹

⁸⁶ Shazli, 75.

⁸⁷ Heikal, 23.

⁸⁸ O'Ballance, 52.

⁸⁹ Herzog, War of Atonement, 39.

⁹⁰ Herzog, The War of Atonement, 19-20.

⁹¹ Shazli, 184-187.

There were many other errors committed by the Egyptian leadership during the war that resulted in the ultimate failure of the Egyptian military in 1973. One example was the decision that the 200 T-62 tanks that were received from the Soviet Union would not be sent were they would be most effective in battle, as independent operational reserves to be used as the situation on the battle field required. They were instead dispersed and diluted within two existing brigades whose officers, the former Minister of War, felt he could trust. The Egyptian leadership feared concentrating such powerful and effective tanks in the hands of officers who might later become a risk to internal security of the regime. This is a prime example of internal threat considerations trumping external threat realities.⁹²

One of the most glaring mistakes committed by the Egyptian leadership that would result in a dramatic turn in Egypt's fortunes during the war was the decision to carry out an assault on the 14th of October. The assault on the 14th by Egyptian forces had the objective of pushing east to the Sinai Passes. This was done despite the lack of readiness on the part of the Egyptian forces to carry out such an assault, with General Shazli stating that "we were forced to launch a wide offensive before the suitable moment."⁹³ The offensive also required the use of operational reserves that were posted in the West Bank of the canal with the specific aim of countering a possible Israeli crossing. Finally, the decision to carry out the push east was taken despite the knowledge that Egyptian forces would be beyond the protection of their anti-air umbrella and vulnerable to attacks by the IAF.⁹⁴ Despite all these circumstances that dictated an offensive not be carried out, President Sadat insisted that it take place. The assault on the 14th was a complete failure, one that depleted Egyptian forces and turned the tide of battle against them.

Additional errors committed in the name of internal regime security includes the decisions taken after the break through of Israeli forces to the West Bank of the Canal. When the Israelis carried out their canal crossing operation, there were few Egyptian forces available to block their advance. This was caused by the decision to use the operational reserves stationed on the West Bank for the 14th of October offensive. Asked why no reserves were being sent to confront the Israelis in the West Bank, an officer responded, "what reserves?"⁹⁵ With Israeli forces in the West Bank, they were able to destroy several SAM batteries which created gaps in the anti-air defensive umbrella. This led to the IAF being able to provide ground support to Israeli forces on the ground, which resulted in increased pressure on Egyptian forces that were unable to cope with the onslaught.⁹⁶

When the magnitude of the Israeli crossing began to be understood, General Ismail Ali and President Sadat continued to refuse any pull back of forces in the Sinai and redeploying them to the West Bank. They argued that any pullback might induce panic in the soldiers. Shazli suspected that they refused to pull back some of the troops because both Sadat and Ali were going to address the people's assembly, the parliament, the next day, and did not want to appear weak.⁹⁷ Another bad strategic choice made to protect a politically vulnerable regime.

⁹² Shazli, 140-141.

⁹³ Insight Team of the *London Sunday Times*, 296.

⁹⁴ Al-Badri, 172.

⁹⁵ Insight Team of the *London Sunday Times*, 344.

⁹⁶ Insight Team of the *London Sunday Times*, 342.

⁹⁷ Shazli, 252.

Another bad decisions that exacerbated the effects of the Israeli crossing on Egyptian forces, was the downplaying of the magnitude of the Israeli crossing. A general alert to the units stationed in the West Bank was forbidden out of fear of inducing panic. As a result, these units did not take any precautions, as they believed that they were far from the front lines and from enemy forces. By hiding the truth of the breakthrough, many convoys, guard units, SAM batteries, and rear headquarters were ambushed and attacked, to their complete surprise.⁹⁸ The decision not to openly announce the Israeli crossing is most likely the result of a weak administration with shaky foundations fearing its failures being made public.

Another negative role played by Egyptian civil-military relations can be seen in the very decision to launch the war before the military was ready for such operation. The internal threat that Sadat faced forced him to start the war with Israel despite weaknesses in the military, that otherwise would have needed years to remedy. The EAF was suffering from a severe shortage of pilots, with 150 aircraft kept in storage because of a lack of pilots. The country needed at least another 6 years to train enough pilots as was needed. The Israelis one the other hand had about 3 pilots per aircraft.⁹⁹ If Sadat waited several years to launch the war, his regime might not have survived. This is one reason why he did not wait to rebuild the air force to a level capable of confronting the IAF. And so, the country went to war without being adequately prepared, a shortcoming that the Egyptian military would pay a high price for once gaps begin to form in their air-defenses.¹⁰⁰

These findings reveal that civil-military relations theories have adequately explained how certain strategic decisions were made. Some of these strategic decisions resulted in the initial success of the Egyptian army, while other choices were poorly made, and resulted in unambiguous reversals. With the military more firmly under civilian control during the war, many actions could be taken to improve the quality of the military by appointing qualified officers, and improved training and planning. Yet at the same time, the Egyptian regime was in a politically precarious position, which forced it to make strategic decisions that were harmful to battlefield effectiveness.

⁹⁸ Shazli, 261.

⁹⁹ O'Ballance, 277-287.

¹⁰⁰ Adan, 261.

Materialist Analysis

The material factor played a significant role in the performance of the Egyptian army during the war. By examining the role played by Egypt's military holdings, we can understand many aspects of the war that could not be explained by the other available theories.

Economic Overview

There are several ways to assess the effect of a state's economy on its military capability, including its GDP, GDP per capita, defense spending, and defense spending per soldier. Egypt and Israel's GDP in 1972, the year before the war, was \$35,275 million and \$29,342 million, respectively, while their GDP per capita was \$1,013 and \$9,478, respectively. These figures fit well with the understanding that GDP per capita is a better indicator of military strength than simple GDP figures.

In 1972, the year before the war, Israeli defense spending was estimated at \$1,247 million, while Egyptian defense spending was \$1,510 million. Though Egypt spent more on its military overall, it also had a population that was more than 11 times the size of Israel's. By calculating defense spending per capita we can get a better understanding of the quality these countries' respective armed forces. Defense spending per capita for Israel was around \$404 million, while for Egypt it was \$43 million.¹⁰¹ These figures show that Israel spent almost 10 times as much as Egypt did per capita. Through 1967 and 1973, Israel has constantly maintained a defense spending per capita that was roughly 10 times larger than Egypt's.¹⁰²

Another good method to assess a state's military strength can be accomplished by evaluating military spending per soldier by dividing total military spending by the number of soldiers in a state's military. This is a valuable method through which we can assess the quality of a state's individual soldiers. In 1972, Egypt's combined regular and reserve military personnel amounted to 785,000 individuals. This means that the country spent almost \$1,924 per soldier in the year leading up to the war. At the same time, Israel maintained a force of 325,000 individuals, consisting of regulars and reserves, spending \$3837 per soldier, almost twice as much as Egypt.¹⁰³ Taken together, both GDP per capita, defense spending per capita, and defense spending per soldier, show that Israel maintained a distinct advantage over Egypt in each of these measures. In strictly materialist and economic terms, Egyptian weakness on the battlefield can be easily explained by these disadvantages.

Strategic limitations

Certain limitations in the Egyptian military's qualitative holdings dictated the type of strategy that Egypt could carry out during the war. Shazli, the chief of staff, believed that the only viable plan for the October War was a limited attack across the Canal, destroy the Bar-Lev line, take defensive positions a few kilometers from the canal, and dig in then wait for the Israeli counter-attack. The reason why a limited attack was the only available option was because the EAF was too weak to confront the IAF in a head-on conflict. As such, the EAF could not provide ground support, while the SAMs had a limited offensive capability and

¹⁰¹ "The Middle East and the Mediterranean." *The Military Balance*, 72.1 (1972): 31-32.

¹⁰² "Part III: Non-aligned countries." *The Military Balance*, 66:1 (1966), 36-42.

¹⁰³ "The Middle East and the Mediterranean.", 31-32.

could not be rapidly moved to support attacking troops deep into the Sinai. This strategic plan was meant to take advantage of Israel's smaller population by taking a toll on its economy through continued mobilization. Additionally, Israeli efforts to dislodge the entrenched Egyptian forces would eventually result in heavy casualties for the Israelis, a prospect that is unacceptable for a country with a small population. It was understood that any Egyptian offensive beyond this strictly limited operation would be "suicide."¹⁰⁴

Additionally, the Egyptian army did not possess the necessary equipment to carry out an assault more ambitious than the one originally planned for. This included a lack of a capable armored force. Even had the Soviets provided the necessary equipment, the Egyptian military would not be able to absorb them in time for the planned attack. The Egyptians would need several more years to be fully able to utilize any new equipment.¹⁰⁵ These restrictions dictated the only possible strategy that Egyptian military planners could pursue.

Quality of soldiers

A lack of qualified officers enlisted in the military can have severe detrimental effects on the training and the performance of the soldiers in the field, a problem from which that the Egyptian military suffered. The Egyptian military suffered from a shortage of over 30,000 officers, and it would take many years to properly train a sufficient number. To meet this deficiency, the new rank of 'war officer' was created. These officers would be specialized in a single specific task, "with the barest knowledge of other skills."¹⁰⁶ Out of a total of 66,000 officers during the war, nearly half of them were War Officers. And as officers are responsible for training their units and for leading them in combat, this lack of training in the officer corps would directly influence the performance of military units in the field. Additionally, to expand the ranks of soldiers to the levels needed to carry out the crossing operation, medical and educational standards were relaxed as not enough draftees could be acquired in time for the war. This generally resulted in a more poorly educated and trained army.¹⁰⁷

The lack of training particularly affected the EAF. Shazli stated that the EAF was the weakest branch of the military, being at least 10 years behind the IAF. Egyptian pilots had an average of 1,000 hours of flight experience, while Israeli pilots had about 2,000 hours of experience, giving Israeli pilots twice the training and experience that Egyptian pilots had.¹⁰⁸

An example of the poor handling of aircraft by Egyptian pilots is demonstrated by the number of crashes that occurred during training exercises. In 1971, it was estimated that the Egyptian air force lost ten aircraft a month to training exercises, four times the losses incurred by Western air forces.¹⁰⁹ This rate of loss can be due to different factors such as recruiting under qualified pilots or through rushed training to raise the number of pilots available for the war. Lastly, these losses can also be due to poor maintenance of the aircraft, a charge that has been leveled against the Egyptian military repeatedly.

¹⁰⁴ Saad Shazly. *The Crossing of the Suez*. American Mideast Research, 2003, 31, 25-27.

¹⁰⁵ Shazly, 28.

¹⁰⁶ Shazli, 49.

¹⁰⁷ Shazli, 50.

¹⁰⁸ Shazli, 19-20.

¹⁰⁹ Khalidi, 23.

Highly qualified technicians are as important to a military performance as trained soldiers are. Technologically proficient countries are more adept at fielding larger forces at any given time as they can maintain their equipment and thus keep them in service. An example of how regularly some equipment requires maintenance can be seen in the M-48 Patton tanks which were found to break down every fifty-eight kilometers.¹¹⁰ A technologically capable country like Israel would be able to carry out repairs on these vehicles as they broke down, while a country like Egypt would struggle with maintenance needs. Egypt's maintenance problems were so severe that Soviet Advisors expressed frustration at the length of time needed by Egyptian forces to learn how to maintain the weapons and equipment that they owned.¹¹¹

An indicator of Egypt's low technological competence can be seen in the arms production. In 1972, Israel's arms production was valued at \$428 million, while the arms production of all Arab states was around \$93 million.¹ Also, the disparity in the number of publishing scientists in Israel and Egypt is a strong indicator of technological and material inferiority of the Egyptians. Israeli scientific output per capita indicates that one Israeli is more scientifically productive than 50 Egyptians.¹

This poor training, and inability to absorb new technology stems from Egypt's repeatedly seen weakness in its capacity to handle modern technologies, maintain its equipment, and in its low standard when it comes to recruitment. All these shortcomings are directly linked to a dearth of material resources, both human and technological, and an overall underdeveloped economy.

Improvements

The performance of soldiers increases with training. To carry out that training, soldiers need to practice and repeatedly perform tasks that they will be asked to carry out during the war. This repeated practice requires a significant amount of resources, as exemplified by the fact that Egyptian Sagger teams repeatedly trained for months before the war, firing 25 missiles a day on average. This type of training consumes resources and would only be possible with additional material capability.¹¹² Another example of additional resources devoted to the training of the soldiers is seen in the claim by the commander of the Engineer Corps, whose men practiced the crossing of the canal and bridging operations at least 300 times before the war.¹¹³ This increased emphasis on training is one of the major differences between the Egyptian army of 1967, and the army of 1973.

As the army was suffering to meet the demand of the Egyptian leadership, some reforms were put in place to both increase the number and quality of draftees and reservists. Prior to the Six Day War, the conscription system in Egypt laid most heavily on the poorer and more rural peasants. University graduates were regularly granted deferrals and exemptions from service. Before the October War, the system was modified to increase the number of university and technical school graduates, increasing the overall literacy and education level in the military. The Israelis found that many Egyptian prisoners of war were "highly qualified academicians."¹¹⁴

¹¹⁰ Insight Team of the *London Sunday Times*, 291.

¹¹¹ Pollack, *Arabs at War*, 49.

¹¹² O'Ballance, 74.

¹¹³ O'Ballance 29.

¹¹⁴ Herzog, 15.

A good example of how enhanced training resulted in improved performance of the Egyptian army can be seen in their fire control. This term refers to the ability of soldiers to hold their fire until the enemy reaches within effective range of their weapons, and until the soldiers can take a clear shot; not to fire “until you see the whites of their eyes.”¹¹⁵ It takes well-trained soldiers to be able to effectively hold their fire, while untrained soldiers would panic and fire erratically. The Israeli General, Adan, has recounted several stories where Egyptian commandoes held their fire, even when under heavy attack themselves, until Israeli units came within very close range.¹¹⁶ Yet, despite these examples of highly trained Egyptian commandos being able to maintain fire control, one of the logistical problems that were experienced by the Egyptians during the war was the rapid depletion of ammunition and rations. This indicates an over-all poor ability of the average Egyptian soldier at resource management and fire control.¹¹⁷

Equipment

To assess the material advantage of a state over another, one must not only assess the quantity of equipment possessed by either side, but also compare the quality of the equipment that is in possession. In this regard, the Egyptian military suffered from inferior equipment relative to the Israeli military, including its holdings of tanks and aircraft which will be examined below.

The bulk of Israeli armor, about 78%, was superior to the Soviet T-54 and T-55 tanks, which constituted most of the Egyptian armor.¹¹⁸ Out of the 1,000 tanks in the possession of the Egyptian military, 500 of them were T-54s and T-55s, which were equipped with 100 millimeter main guns. While the older T-34 model equipped with 85 millimeter main guns numbered around 280. This meant that a total of 780 out of 1,000 tanks in Egypt’s possession were inferior to Israeli tanks, all of which were armed with 105 millimeter guns. Only the T-62 tank with its 115 millimeter gun could match the Israeli tanks, and the Egyptians possessed only 200 of them.¹¹⁹ The superiority of Israeli main guns gave their tanks greater range at 5,000 meters, while Egyptian tanks had a range of 3,000 meters. This difference in range allowed Israeli tanks to begin firing their guns long before Egyptian tanks could open fire, a clear advantage in combat. Israeli Patton and M-60 tanks also possessed improved optical range-finding systems while T-54 and T-55 tanks crews had to rely on their own judgment regarding the distance of the target.¹²⁰

To make up for its inferiority in armored warfare, Egypt utilized a large number of anti-tank missiles to great effect in the opening of the war. In fact, the first wave of Egyptian soldiers that crossed the canal consisted purely of infantry armed with anti-tank weapons.¹²¹

¹¹⁵ *Connecticut Military Department: Israel Putnam*. 15 Dec. 2106. Accessed: 28 July 2017. <<http://www.ct.gov/mil/cwp/view.asp?a=1351&q=258410>>.

¹¹⁶ Adan, 96.

¹¹⁷ O’Ballance 148.

¹¹⁸ O’Ballance, 55.

¹¹⁹ Shazli, 237.

¹²⁰ Khalidi, 31-32; Insight Team of the *London Sunday Times*, 293.

¹²¹ "How the Egyptians Crossed the Canal." *Journal of Palestine Studies* 3.2 (1974): 163-68.

In terms of aircraft possessed by Israel and Egypt in the 1973 war, it appears that Israel possessed qualitatively superior weapon systems. The EAF in 1973 was comprised mainly of Mig-21s, Mig-17s, and SU-7s. The Israeli air force on the other hand, consisted of the F4, A4, and Mirage aircraft, which were considerably more effective than Soviet built aircraft used by the Egyptians. The F4 fighter utilized a canon that had a fire-rate of 6,000 rounds per minute, while the Mig-21 had a fire-rate of only 600 rounds per minute. Additionally, the F4 had a bomb-load of 7,500 kilograms, while the Mig-17 only had a 500-kilogram bomb-load. Finally, the range of the F4, the A4, and the Mirage was 800, 800, and 640 kilometers respectively, while the Mig-21s and the Mig-17s had a range of 500, and 575 kilometers respectively.¹²² Even had the Egyptians delayed the war to acquire and absorb more sophisticated aircraft, Shazli believed Egypt would still be disadvantaged in relation to Israel. Because of Israel's ability to absorb new technologies faster than the Egyptians, they would simply continue to widen the technological gap between themselves and the EAF.¹²³ Overall, the IAF was materially superior to the EAF in all these different measures, and coupled with the better training IAF pilots received, Israel was able to achieve air superiority.

To compensate for its weakness in the air, Egypt relied on a massive air-defense barrier, which was used to hold back the IAF as Egyptian forces crossed the canal. The SAM umbrella in Egypt and Syria was so dense that in the first three days, over 1,000 missiles were launched on both fronts, constituting the densest SAM deployment in the world at the time.¹²⁴ This was one major improvement to Egyptian arms since the Six Day War.

This large discrepancy in terms of economic strength, defense spending, human capital, and quality of equipment, is reflected in the loss-exchange ratio (LER) achieved by Egypt during the war. LER is calculated by dividing the attacker's casualties by the defender's casualties. By calculating Egyptian losses on the more optimistic figure of 10,000, we get an LER of 5.7 - a very high figure for any military.

Materialist explanations for the military's performance show that Egypt suffered from a severe disadvantage in the quality of officers, military equipment, and economic strength. These shortcomings revealed themselves during the war when Egyptian tanks and aircraft could not compete with Israeli forces after the effects of the initial surprise wore off.

¹²² Khalidi, 25-27.

¹²³ Shazli, 160.

¹²⁴ O'Ballance, 295.

Culture and Regime Type

The Egyptian military faced several limitations that are arguably caused by cultural, societal and organizational factors. At times, the military leadership attempted to overcome these limitations through rigorous planning. This initially led the military to success, but would also be a hindrance as the war dragged on.

The Egyptian leadership understood that the country's military faced certain weaknesses, such as poor initiative on the part of their junior officers, poor maneuverability on the field, and an army mainly composed of inadequately educated conscripts. To counter these weaknesses, the canal crossing operations, along with the formation of the defensive bridgeheads, were planned to the smallest detail. This rigorous preparation achieved initial success with the crossing, but then proved to be a hindrance when the battle turned fluid and diverged from the prepared script.

The use of an inflexibly scripted plan became a liability to the Egyptian military, as Israeli commanders began to be able to predict the future movements and behavior of Egyptian forces. This rigid planning negated any attempt at initiative by local commanders. It was documented by a New York Times correspondent, stating that "the Egyptian army has doggedly adhered to a comprehensive, preconceived strategic and tactical plan. Military spokesmen insist that there have been no departures from the plan, no improvisations and no unauthorized initiatives by local commanders."¹²⁵ The consequence this over centralization had on the effective functioning of Egyptian forces, resulted in delays. As an example, when the Egyptian 2nd and 3rd Armies needed to coordinate a response to the Israeli breakthrough across the canal, they required the signatures of four different staff officers, fatally delaying their response times.¹²⁶ These shortcomings were a direct result of Egyptian military culture that was highly centralized and micro managing.

Furthermore, Egyptian military culture was seen to have adversely affected the training received by its officers. Shazli believed that officer training was uneven. He recalled that when meeting sergeants, lieutenants, and captains, they would be able to discuss battle plans very fluently, but would be lost when the discussion turned to smaller formation maneuvers such as platoon tactics. Shazli also believed that the institutional culture of the Egyptian military resulted in an overbearing supervision of junior officers, which resulted in them not being able or willing to take initiative in the field.¹²⁷

Others have blamed numerous poor performances by the Egyptian military on culture. A former chief of Israeli military intelligence, blamed the failings of the Egyptians on a lack of social and ethical standards. After the Six Day War, he interviewed Egyptian POW officers, and was surprised to find that they were mostly unfamiliar with the names of the soldiers in their respective units. He was even more surprised to find that these officers failed understand the peculiarity of their lack of awareness. He believed that this phenomenon was a result of Egyptian cultural and societal norms. According to him, cultural characteristics also explains why the officers fled the battle, leaving their soldiers to their own devices. This lack of social

¹²⁵ Quoted from Insight Team of the *London Sunday Times*, 221.

¹²⁶ Insight Team of the *London Sunday Times*, 341.

¹²⁷ Shazli, 47.

cohesion and trust is a result of social and class divisions, which in turn, adversely affect an army's ability to fight effectively in combat.¹²⁸

During the October War, Egyptian leadership started to use culture and religion to increase morale in its soldiers. They did this by over-emphasizing the national and religious dimensions. During the war, loud speakers along the canal front repeatedly broadcasted the phrase *Allahu-Akbar* (God Is Greatest).¹²⁹ In addition to what might be referred to as religious nationalism, there was also a strong streak of anti-Semitism in military training, with pamphlets describing Jews as having “spread out throughout the world in order to poison mankind...”¹³⁰ By denigrating and castigating Israelis as inherently wicked, and that Egyptian soldiers were fighting with the support of their god, the Egyptian leadership was hoping to make Egyptian soldiers fight more aggressively. Unfortunately, it is difficult to quantify the impact of these actions on the fighting of the average Egyptian soldier, and how that might have affected their treatment of Israeli POWs.

Regime type

As seen in the previous chapters, several scholars have argued that the reason why democratic states are more effective militarily is that democratization itself is a result of increased wealth. Accordingly, democratic states are better able to muster resources and devote them to their military, and thus, have a more effective military. Conversely, non-democratic states are less wealthy and less able to devote resources to their military, making them ineffective in any given conflict.¹³¹

This theoretical approach is also justified in the case of Egypt and Israel. Israel ranks highly on the Polity IV data series as a democracy, achieving a ranking of 9, on a scale of -10 to 10. Egypt on the other hand scores a rank of -7.¹³² This ranking remained the same through the Six Day War and the October War. This shows that not only is Israel classified as a democratic state and Egypt as an autocratic state, but that both countries are on almost opposite ends of the scale.

The disparity in regime type between the two states is reflected in economic wealth and development. In 1972, the year before the war, Egypt's GDP was \$35,275 million, while its GDP per capita was \$1,013. Israel's GDP in the same year was \$29,342 million, while GDP per capita was \$9,478. In 1966, a year before the Six Day War, Egypt's GDP \$29,555 million, while its GDP per capita was \$941. Israel's GDP in the same year was \$16,349 million, while its GDP per capita was \$6,190.¹³³ As can be seen, Egypt maintained a slightly

¹²⁸ Yehoshafat Harkabi. “Basic Factors in the Arab Collapse During the Six-Day War,” *Orbis*, vol. 11, no. 3, Fall 1967, 677-691.

¹²⁹ Shazli, 241.

¹³⁰ Quoted from Herzog, 34.

¹³¹ Desch, 171-173.

¹³² “Polity IV Regime Trends: Egypt.” *Polity IV Regime Trends: Egypt*, Systemic Peace, 2014, www.systemicpeace.org/polity/egy2.htm. Accessed 14 Aug. 2017;

“Polity IV Regime Trends: Israel.” *Polity IV Regime Trends: Israel*, Systemic Peace, 2014, www.systemicpeace.org/polity/isr2.htm. Accessed 14 Aug. 2017.

¹³³ Maddison, Angus. *The World Economy - Volume 2: Historical Statistics*. Publication. Paris: Development Centre of the Organisation for Economic Co-operation and Development, 2006. 301, 307, 317, 323.

larger economy than Israel in 1966 and in 1972, but in terms of economic development, as indicated by GDP per capita, Israel was much wealthier.

Difference in regime type can also explain why Egypt would launch a military campaign against Israel when it was clear that the country was not militarily prepared. Reiter and Stam argue that democratic states only go to war when there is a high chance of success, while non-democracies might not behave so prudently. This seemingly risky behavior might be explained by the ‘selection effect’ that Reiter and Stam have highlighted.¹³⁴

Cultural and regime-type explanations, though able to explain some aspects of the Egyptian military’s performance, were unable to adequately explain many incidents. Other than an increased emphasis on religious and racist dimensions by Egyptian leadership, not many changes in culture can be accounted for. The largest effect that culture had can be seen in a military culture that was over-centralized and micro managing, preventing initiative and freethinking on the part of the officers on the field.

¹³⁴ Reiter and Stam. *Democracies at War*, 20.

Conclusion

This paper has sought to explain the changes in the performance of the Egyptian military's in the October War. In pursuit of this aim, the background to the war had been summarized, the literature regarding military effectiveness has been reviewed, and an analysis of the Egyptian military's performance and materiel has been carried out.

Overall, it seems that civil-military relations theories, along with materialist analysis, sufficiently explain the overall performance of the Egyptian military during the October war. Though this finding does not eliminate other theoretical perspectives, it does however reveal that materialist explanations are able to explain the bulk of Egypt's military failings, while civil-military relations are able to provide insight into the reasons why the Egyptian leadership took certain actions that resulted in this poor performance.

The analysis revealed that each of the theoretical perspectives carried explanatory weight, but the theories which have proven to be most valuable in explaining military effectiveness have been the materialist and civil-military accounts. Civil-military theories were able to sufficiently explain both the improvements that were seen during the opening phases of the war, as well as the shortcomings that were later witnessed. Materialist theories could highlight the inherent weaknesses in the Egyptian economy, military spending, and material holdings. Taken together, these two approaches explain why the Egyptian leadership carried out poor decisions that were bound to end in failure, and why the Egyptian military suffered from an inherent weakness when it came to tactical maneuvers when facing Israeli forces.

There is a possibility that the democratic nature of the Israeli government is the reason why it possessed greater wealth and was thus able to muster greater resources for its defense spending. Future research could further examine this link by uncovering if democracies are able to expend more of their resources on defense spending than comparatively wealthy autocratic states.

Another finding of this paper is that the recent scholarly fixation on intangible qualities such as culture and nationalism might not be as determinant in military effectiveness as has been argued. Other than the increased focus on the religious differences between the antagonists by the Egyptian leadership, not much change has been identified. Additionally, the culture and nationalist makeup of a country like Egypt, could not have been so altered in 5 years to be able to explain the changes to its military performance. If the preliminary findings in this paper are correct, then research on culture and nationalism might be misleading or overemphasized.

A gap that has been identified by this paper and needs to be more thoroughly investigated, are the factors that influence the level of training in an army. It needs to clearly highlight how training affects specific behaviors on the battlefield, such as maneuver warfare, as these are crucial for success and is currently unanswered. The reason why this gap has been left unanswered is because of general time and space constraints that has limited this research.

Future research endeavors could further examine what influences the level of training given to militaries, how states decide on the amount of resources to be dedicated to training and how it affects the performance of any army in war. Furthermore, such research might be successful in formulating a theory which focuses on the effects of training on military performance, beyond the simple accounts provided by civil-military relations theories.

Finally, it would be interesting to see if democratic states generally provide a higher quality training for their militaries regardless of wealth levels compared to autocracies.

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