Death Before Dismount?: Mechanization, Force Employment, and Counterinsurgency Outcomes in Iraq

by

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SUBMITTED TO THE DEPARTMENT OF POLITICAL SCIENCE ON JANUARY 27, 2011 IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN POLITICAL SCIENCE

ABSTRACT

Recent research suggests that heavily mechanized armies perform worse in counterinsurgency campaigns than those that use fewer vehicles. The U.S. military’s 2007 operations in Iraq, however, present an empirical quandary for the mechanization hypothesis: a vehicle-heavy army proved able to suppress an insurgency, allowing Iraqi leaders to work towards a long-term political solution. This paper argues that force employment, not mechanization, drives counterinsurgency outcomes—what matters is not that armies have many vehicles or soldiers, but how they choose to use them. When heavily mechanized forces change their tactics and doctrine to line up with counterinsurgency principles, shifting from an enemy-centric to a population-centric approach, outcomes dramatically improve while military-wide mechanization levels remain constant. Using an original dataset, this paper conducts a large-n regression analysis of the impacts of mechanization at the provincial level in Iraq, and finds little support for the mechanization hypothesis. A subsequent comparative case study, of the heavily mechanized 3rd Armored Cavalry Regiment’s operations in Tall Afar and the light infantry 82nd Airborne Division’s operations in Fallujah, indicate that force employment rather than mechanization is a key indicator of counterinsurgency outcomes. The finding has important implications for force structure policy, as it indicates that mechanized forces can indeed conduct successful counterinsurgency campaigns.

Thesis Advisor: Roger D. Petersen
Title: Arthur and Ruth Sloan Professor of Political Science
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Acknowledgements

Professor Roger Petersen was absolutely instrumental in the creation of this document and in my educational development. He has instilled in me a knowledge of political science methods, adding rigor to my work and thought process, and helped me avoid the various methodological pitfalls that I encountered while researching and writing this paper. He has been an incredible mentor over the past two years, and has changed the way I think about conflict, ethnicity, and security issues.

Several people were involved in providing help and advice for this paper. Professor Jacob Shapiro kindly provided me data on attack levels in Iraq at the district level (from the Empirical Studies of Conflict project housed at the United States Military Academy), which formed the basis of my statistical analysis. Colonel William Graham, U.S. Army, was a willing sounding board for my numerous questions, and helped me gain an understanding of how mechanized units have evolved to operate in the counterinsurgency (COIN) environment. Lieutenant Colonel Thomas Gordon, U.S. Marine Corps, helped me learn about the technical aspects of armor operations, and gave me insight as to the uses of tanks and armored vehicles in the COIN fight. Professor Colin Jackson was also very helpful in advising me as I worked through my statistical analysis, making me think with greater rigor about my variable selection and definition. Professor Jason Lyall gave me very helpful insight into how mechanized forces alter their force employment and mechanization levels during COIN campaigns, and made me think more deeply about the issue. Wesley Morgan also provided help as I went about gathering data on unit deployments in Iraq. Susan Twarog and Diana Gallagher were instrumental in helping me navigate the thesis process, and went out of their way to make sure that I finished on time.

I would also like to thank my family and friends for their support and encouragement as I researched and wrote this document.
I. Introduction

The principles of mechanized warfare and counterinsurgency could not be more different. The former emphasize the destruction of a known enemy through rapid, decisive maneuvers; the latter emphasize the long-term commitment of troops to secure population centers and remove an elusive enemy’s base of support. Most state armies’ force structure and doctrine, designed for conventional warfare against other states, reflect this difference. Soldiers train with tanks and armored personnel carriers, practicing quick assaults against enemy lines; ground forces are integrated into combined arms operations, where artillery and air assets help suppress and destroy enemy formations; commanders learn to plan complicated maneuvers to crush fixed positions. Little attention is given to key counterinsurgency tasks like dismounted patrolling, cultural awareness and language training, human intelligence gathering, and local governance building.

When mechanized forces are forced to do counterinsurgency (COIN), the results appear unsurprising. Recent research by Jason Lyall and Isaiah Wilson (2009) shows that, across time, mechanized forces perform dramatically worse than forces that use fewer vehicles.¹ Armies in the lowest quartile of mechanization (with over 834 soldiers per vehicle) have historically had a 0.5 probability of winning a counterinsurgency campaign, while armies in the highest quartile (with under 108 soldiers per vehicle) have had less than a 0.25 probability of victory, controlling for a variety of factors. Lyall and Wilson privilege an “information starvation” explanation for mechanization’s negative impacts on COIN performance. Mechanized forces, designed for direct

battle in armored vehicles, have difficulty interacting on a consistent basis with local populations, making it hard to recruit collaborators, gather intelligence, or to understand the grievances and social structures within the populace. Because they are more mobile, mechanized forces tend to cover a great deal of ground but fail to provide persistent presence, making it impossible to guarantee security to a population who lives in fear of insurgents. Worse, mechanized forces have huge and very specialized logistical needs, requiring that they operate out of large bases and making it difficult for them to create economic interdependencies with locals. All of this results in an information-starved force unable to selectively wield violence against insurgents, without any meaningful understanding of the local power structure through which to win over the insurgents’ popular base of support.

While Lyall and Wilson’s work show clear perils for mechanized forces that attempt counterinsurgency, recent evidence from United States military operations in Iraq presents us with an empirical puzzle: despite very high mechanization levels, the 2007 troop surge to Iraq proved highly successful, dramatically reducing violence in the country and allowing Iraqi leaders to work towards a long term political solution. The conflict has not yet ended, and success is by no means guaranteed, but it is widely recognized that U.S. and coalition forces were successful in implementing counterinsurgency principles, and in the process badly damaged the insurgent organization.2 On Lyall and Wilson’s mechanization score, even with the most conservative possible estimate, the 2007 U.S. military ranked in the highest quartile (with 79 soldiers per vehicle).3 Perhaps more importantly, well over half of the Army battalions in Iraq at

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3 Numbers are derived from the International Institute for Strategic Studies’s *Military Balance 2007*. The number is a very conservative estimate, including all Marine and Army soldiers both on active duty and in the reserves, and only includes major Army and Marine combat vehicles (M1 Abrams tank, M2 Bradley Infantry Fighting Vehicle, the Stryker armored vehicle, and the Marine Light Armored Vehicle), while excluding all self propelled artillery, the M113 Armored Personnel Carrier, and other various specialized fighting vehicles. Including those vehicles (which
the height of the troop surge were designated mechanized or motorized, battalions that by doctrine operate from tracked or wheeled vehicles.⁴

I argue that Lyall and Wilson’s results come from the conflation of two very different variables, mechanization and force employment, and that force employment, not mechanization, is the primary driver of COIN outcomes. The idea that force employment is a primary indicator of war outcomes, above such material factors as technology, amounts of equipment, or numbers of personnel, is derived directly from Stephen Biddle’s work on conventional warfare.⁵ In counterinsurgency, what matters is not that armies have many vehicles or soldiers, but how they choose to use them. Because mechanized armies tend to have a great deal of difficulty transitioning out of their conventional combat roles, mechanization often works just like force employment in determining COIN success or failure, as mechanized forces may stay mounted in their intimidating vehicles, conducting violent raids while eschewing interaction with the local population and failing to provide a persistent security presence.

When heavily mechanized forces change their tactics and doctrine to line up with counterinsurgency principles, however, outcomes dramatically improve while military-wide mechanization levels remain constant. Tank crewmen can dismount and patrol local neighborhoods, mechanized infantry can learn to knock on doors rather than break them down, vehicle crews can use rounds and targeting systems that minimize destruction to buildings and

would have been counted in Lyall and Wilson’s formulation), the mechanization level jumps from 79 soldiers per vehicle to 37 soldiers per vehicle.

⁴ See Wesley Morgan, Order of Battle, Multi-National Force – Iraq, August 2007 (Institute for the Study of War), no longer available online (see http://www.understandingwar.org/IraqOrderofBattle for most recent orders of battle). Out of 57 active Army combat battalions in Iraq, 25 were designated Combined Arms Battalions (all heavy tracked vehicles) or Armored Reconnaissance Squadrons (which partially operate out of heavy tracked vehicles), 8 were designated Stryker Battalions (which operate out of 20-ton 8-wheeled vehicles called Strykers), while 24 were designated Infantry Battalions or Reconnaissance, Surveillance, and Target Acquisition Squadrons (the former operates dismounted, and the latter operates with both dismounted and HMMWV-mounted components).

⁵ While counterinsurgency has radically different principles from conventional warfare, Biddle’s central idea—the importance of force employment—is the motive force behind my work. See Stephen Biddle, Military Power (Princeton, New Jersey: Princeton University Press, 2004).
property, and artillery and aircraft fires can be coordinated or eliminated entirely so as to reduce
civilian casualties. In-theater vehicle numbers and vehicle fleet compositions may change, but
this is a result of changing force employment—just as armies preparing to fight conventional
wars alter vehicle fleets to match new doctrines and technological developments, so to do
conventional armies that rework their strategies to fight counterinsurgency campaigns. What
matters is not a military’s mechanization level entering a conflict, but instead how the military
adapts force employment to execute counterinsurgency. While COIN may prove disastrous for
many mechanized armies, it is because they cannot adapt to the new environment, not because
they are mechanized.

Lyall and Wilson recognize this difference, but note that “historical cases from conflicts
as diverse as Algeria, Vietnam, and Chechnya suggest that mechanized armies have belatedly
recognized their deficiencies but proved unable to surmount them,” later discussing how a
combination of “industrial lock-in” and international pressures to mechanize push state armies to
higher and higher levels of mechanization (thus worsening COIN outcomes). In essence, while
Lyall and Wilson recognize that mechanized forces could adapt, they do not believe such
adaptation is likely. Given their data, this view, in a general sense, seems historically correct.
Mechanization may indeed be ingrained in military doctrine, but it is by no means impossible to
overcome—even the most heavily mechanized forces, with proper force employment, can
successfully conduct COIN.

Using mechanization as a proxy for force employment is not only an academic
misinterpretation of the causal forces, but also has serious practical implications. If mechanized
forces cannot perform COIN, then states must either choose to forgo counterinsurgency
campaigns completely or to restructure their militaries to trade conventional capabilities for
counterinsurgency capabilities; if mechanized forces can adapt to perform COIN, they may be able to act as dual purpose forces, fighting while mounted in conventional wars and converting to a counterinsurgent role when called upon.

Using Lyall and Wilson’s argument, one might explain the surprising outcome in Iraq by saying that the U.S. Army went through a process of “de-mechanization,” where units deployed to Iraq with far fewer vehicles than in their doctrinal table of organization and equipment (TO&E). The vehicles that units did bring were often kept in the motor pool, used as stationary pillboxes, or only brought out as a quick reaction force (QRF) in the event of heavy fighting, rather than being used as part of regular patrolling patterns. One could argue that the U.S. military’s level of mechanization in Iraq decreased, which, consistent with Lyall and Wilson’s theory, would in turn help cause success. While a countervailing case could be made that the level of mechanization in Iraq did not change radically over time, as the Army traded many of its tracked vehicles for lighter wheeled vehicles, I instead argue that the driving force behind the “de-mechanization” process was a dramatic change in force employment, which shifted the military-wide focus away from an enemy-centric approach that emphasized the use of force to find and neutralize insurgents to a population-centric approach that required soldiers to dismount from their vehicles in order to interact with and protect the local population.

Given the COIN literature, which places such focus on securing the populace, understanding local power structures and grievances, and gathering human intelligence, it seems almost tautological to say that soldiers who stay in armored vehicles cannot adequately conduct counterinsurgency—far more interesting is to ask whether organizations that place such emphasis on conventional warfare can ever adopt the radically different set of tactics and strategic mindset that COIN requires. The very fact that a “de-mechanization” process occurred

6 Jason Lyall, e-mail exchange with author, September 15, 2010.
within the U.S. military in Iraq is striking evidence that force employment dramatically changed between 2003 and 2007, a change that remade a heavily mechanized army into a successful COIN force.

The purpose of this paper is to show that force employment, not mechanization, is a driving force in counterinsurgency outcomes. As we will discuss later, even the most heavily armored vehicles can play a positive role in COIN, given proper use. I focus on what the counterinsurgent force can do to shape outcomes, as certain structural factors may make COIN efforts very difficult, independent of counterinsurgent force employment. In the next section, I will discuss how both mechanized and light infantry units can alter their conventional force employment to be successful in the COIN environment, after conducting a brief review of the structural explanations of counterinsurgency outcomes. In the third through fifth sections, I use Iraq as an extended case study to showcase the explanatory power of force employment over mechanization.

In the third section, I present a statistical analysis that compares the effects of mechanization on counterinsurgency outcomes at the province level in Iraq using an original dataset. The data present a complex picture that shows little support for Lyall and Wilson’s mechanization hypothesis. In the fourth section, I look the operations of the heavily mechanized 3rd Armored Cavalry Regiment in Tall Afar, which present strong evidence that even the most heavily mechanized unit can achieve positive COIN outcomes through good force employment. I then look at the operations of the 82nd Airborne Division in Fallujah, where a light infantry unit used poor force employment and yielded decidedly negative outcomes.
II. Theory

While there is little need to go into a long definitional discussion, it is important that we have a common conception of insurgency: insurgency, as Lyall and Wilson define it, is “a protracted struggle by nonstate actors to obtain their political objectives…against the current political authority (the incumbent).”\(^7\) These objectives are generally to either change the power structure within a state, to break away from government control, or to expel an occupying government.\(^8\) The “primary struggle in an internal war is to mobilize people in a struggle for political control and legitimacy,”\(^9\) and, to mobilize popular support, insurgents can use a mix of techniques like coercion, persuasion (via ideological or economic means, for example), and provocation of the incumbent (causing overly violent reactions that build resentment).\(^9\) Insurgencies are also often fueled by local norms of reciprocity, where people in familial or identity groups feel pressure to support others who have joined an insurgent campaign.\(^10\) Insurgents hide amongst and gain logistical support and recruits from the population, conducting attacks against targets like government personnel and installations, rival ethnic groups, or government collaborators in order to attrit government forces and reduce governmental legitimacy, thus gaining enough followers and popular support in order to attain their political objectives.

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\(^7\) Lyall and Wilson 2009, 70.
\(^9\) Ibid., 15-16.
Structural Factors That Influence Insurgent Success

While I focus this paper on what incumbents can do to fight insurgencies, there are a host of structural factors, largely out of the incumbent’s control, which can influence counterinsurgency outcomes. One such factor is the presence of rough terrain, which provides insurgents places from which to conduct operations. Several studies have tried to account for this by using average elevation or percentage of landmass that is mountainous as proxies for terrain roughness, and have found varying results: Fearon and Laitin found it to be significantly related to incidence of civil war outbreak, Collier and Hoeffler, who used forested in addition to mountainous terrain, found it to be only marginally significant, and Lyall and Wilson found no relation between insurgent success and mountainous terrain.\footnote{James D. Fearon and David D. Laitin, "Ethnicity, Insurgency, and Civil War," American Political Science Review 97 (2003); Paul Collier and Anke Hoeffler, "Greed and Grievance in Civil War," Oxford Economic Papers 56 (2004); Lyall and Wilson 2009.}

Fearon and Laitin’s work on civil war outbreak shows a very strong correlation between gross domestic product (GDP) per capita and the onset of civil war, arguing that states with low tax revenues have lessened ability to control their territory, and that poverty eases rebel recruitment.\footnote{Fearon and Laitin 2003.} Collier and Hoeffler privilege an opportunity cost model of civil war outbreak, by which areas that have poorer, less educated people with little opportunity for social advancement are more likely to rebel.\footnote{Collier and Hoeffler 2004.} In both Fearon and Laitin’s and Collier and Hoeffler’s models, worse economic conditions are strongly associated with the conditions necessary for civil war (and hence insurgency). While counterinsurgents can attempt to create better economic conditions, it is likely that such efforts will require many years to take hold, causing little immediate impact on outcomes. Additionally, Collier and Hoeffler find that states with commodity-based economies

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12 Fearon and Laitin 2003.
are at far higher risk of conflict, especially those with economies based on oil. Fearon disputes the commodity-based economy explanation, but argues that oil economies specifically are associated with civil war risk because oil producers generally have low state capacity and because oil makes for a “tempting prize.”

Mack argues that nationalist movements using an insurgency strategy have typically been very successful, both because they are able to exploit the political liabilities of their opponents and because they are fighting for higher stakes than their adversaries. As Lyall and Wilson extrapolate, if Mack is right, foreign occupiers would have less of a chance of winning counterinsurgency campaigns, because many times their opponents are nationalist movements.

Merom, while agreeing that motivational factors like nationalism might be important in insurgent success, privileges a state’s “cultural capacity…to resort to extremes of brutality and occasionally tolerate significant losses” as an indicator of success. Democracies, Merom argues, are less willing to use violence against populations, because of their susceptibility to public opinion. Moreover, they are less casualty-tolerant, which could lead to a lowered willingness to fight a protracted COIN campaign.

External support, economic and otherwise, can also be a factor in the resilience of insurgencies, especially when that support comes from contiguous countries. Neighboring states can help insurgents in a variety of ways by giving them weapons and economic aid, acting as protective sanctuaries for training and the staging of attacks, and in the provision of fresh recruits.

Urbanization may also prove a factor in insurgent success. Fearon and Laitin postulate that “in the city, anonymous denunciation is easier to get away with,” making it harder for insurgents to operate. The history of successful rural insurgencies is very rich, and corroborates the benefits insurgents receive from operating in rural environments. However, urban areas in modern times may also be very hospitable to insurgents, with the advanced communications and transportation networks they provide. Moreover, slums with large populations are very difficult for military forces to control, with their labyrinthine road networks and dense populations.

Counterinsurgent Best Practices

Insurgencies have typically proven difficult for state governments to extinguish, often because states tend to take an “enemy-centric” rather than “population-centric” approach. Enemy-centric approaches focus on targeting guerrillas through military means, rather than securing the population by stationing units to live amongst locals. As a result, militaries are unable to solve the “identification problem” of discriminating between civilians and insurgents, leading to the use of indiscriminate violence to forcefully root out insurgent organizations. This approach leads to “an escalating and indiscriminate use of military firepower,” causing an “upward spiral of civilian alienation” and leading more of the population to join the

18 Fearon and Laitin 2003.
19 For example, see the cases on Vietnam, El Salvador, and Columbia in Rabasa et. al., Money in the Bank: Lessons Learned from Past Counterinsurgency Operations (Rand Corporation, 2007).
20 David C. Gompert and John Gordon IV, War By Other Means (Rand Corporation, 2008).
insurgency.\textsuperscript{23} A focus on killing the enemy rather than winning the support of the population generally stems from a fundamental misunderstanding of the nature of insurgency, as militaries struggle to interpret conflicts through the lens of their well-developed and bureaucratized understanding of conventional war.\textsuperscript{24}

In the following, I explain a set of generally accepted best practices for a counterinsurgent’s force employment, with a view to establishing a baseline by which to build theory and evaluate case material. Throughout, it is important to remember that I am looking mainly at what military forces can do to win COIN campaigns, rather than the structural factors discussed above or the higher-level political maneuverings that can create long-term solutions. Additionally, despite my attempts below, COIN does not fit into easily definable categories, and COIN behaviors can be binned multiple different ways. The categories below are designed as heuristics to think about counterinsurgency, rather than as lines of operation by which counterinsurgents actually operate. Finally, counterinsurgency efforts must be tailored to local situations—often, what works well in one place may not in another. In large part, the best practices are derived from the \textit{U.S. Army/Marine Corps Counterinsurgency Field Manual} and the work of the widely recognized counterinsurgency practitioner David Kilcullen.

\textit{1. Secure the population through persistent presence.}

COIN is a struggle for the support of the people, and, “In the eyes of some, a government that cannot protect its people forfeits the right to rule. Legitimacy is accorded to the element that


\textsuperscript{24} Ibid.
can provide security.\textsuperscript{25} Without security, people will not feel safe coming forward with information about insurgent identities for fear of retaliation, making it impossible to root out insurgent networks from the population. Moreover, without security, the government finds it difficult to operate, as officials are often threatened with their lives. Reconstruction efforts are also severely hampered, as the people that work on projects and the projects themselves can come under attack. Thus, “the military’s primary function in COIN is protecting [the] populace,”\textsuperscript{26} and “it is essential that [the military] use the principle of mass to protect the critical battleground over which the campaign is being fought: the people.”\textsuperscript{27} Security in a counterinsurgency environment is inherently difficult, as all an insurgent needs to do to delegitimize the government is to sow disorder anywhere, while the government must protect the population everywhere.\textsuperscript{28}

A focus on security has many implications for counterinsurgent force employment. First, forces must get out of their bases and be constantly amongst the population: “Aggressive saturation patrolling, ambushes, and listening post operations must be conducted, risk shared with the populace, and contact maintained.”\textsuperscript{29} One-third to two-thirds of the COIN force should be on patrol day or night, and bases should be in close proximity to the population. This avoids “repetitive raiding,” where soldiers live in large bases removed from the population, going on missions into population centers to attack suspected insurgent hide-outs, but failing to provide persistent presence, thus allowing insurgents free reign to intimidate the populace once incumbent forces retreat to their fortresses.\textsuperscript{30}

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\textsuperscript{25} \textit{Counterinsurgency Field Manual}, 16.
\textsuperscript{26} Ibid., 54. See page 120 for the effect of security on intelligence gathering; See pages 36 and 54 for the positive effects of physical security on NGO and civilian agency operations.
\textsuperscript{27} Nagl 2002, 30.
\textsuperscript{28} \textit{Counterinsurgency Field Manual}, 4.
\textsuperscript{29} Ibid., 48.
\end{flushleft}
2. *Intelligence is everything: interact as much as possible with the populace.*

Counterinsurgency is an intelligence driven endeavor: “without good intelligence, counterinsurgents are like blind boxers wasting energy flailing at unseen opponents and perhaps causing unintended harm.”31 While one of the primary roles of intelligence is to identify insurgents so that they can be captured or killed, it is also essential to have good intelligence so that the counterinsurgent can fix the structural causes of insurgency, find out people’s grievances, and work through the existing social structure. To win over the population, the COIN fighter must be able to target efforts by knowing which neighborhoods are getting electricity, when the trash pick-up is, how adequate medical facilities are, and if water and sewage are flowing properly.32 Moreover, there are certain leaders within the population that hold a great deal of influence, even though they may not hold official positions. By finding out who those leaders are, and co-opting them, the counterinsurgent can build valuable popular support.33

The best way to gain intelligence in a COIN environment is not through traditional military means, like electronic or signals intelligence, but through human intelligence derived from contact between locals and junior-level military personnel. The intelligence gaining process goes hand-in-hand with persistent security presence—“people may approach soldiers and marines during the course of their day-to-day operations and offer information.”34 Key to these interactions is that counterinsurgents are able to build strong relationships with locals, treating

31 *Counterinsurgency Field Manual*, 41.
32 Ibid., 84-102.
33 Ibid., 84-102.
34 Ibid., 119-120.
them with respect and slowly building trusted networks from which to glean intelligence.\textsuperscript{35}

Importantly, intelligence and relationship building can only come from face-to-face interactions—soldiers must dismount from their armored vehicles and talk to people, requiring a tradeoff between force protection and intelligence gathering.

\textit{3. Minimize and discriminatingly target the use of force.}

Though it is not the main focus, “Killing the enemy is, and always will be, a key part of guerilla warfare.”\textsuperscript{36} When force is used, however, it must be used in as discriminate fashion as possible:

\begin{quote}
Combat operations must...be executed with an appropriate level of restraint to minimize or avoid injuring innocent people. Not only is there a moral basis for the use of restraint or measured force; there are practical reasons as well. Needlessly harming innocents can turn the populace against the COIN effort. Discriminating use of fires and calculated, disciplined response should characterize COIN operations. Kindness and compassion can often be as important as killing and capturing insurgents.\textsuperscript{37}
\end{quote}

If force is used too liberally, it gives insurgents ammunition by which to incite the populace against the incumbent.\textsuperscript{38} Even property damage can create resentment amongst a population. Thus, the best counterinsurgents realize that one of the fundamentals of COIN is “putting the well-being of noncombatant civilians ahead of any other consideration, even—in fact, especially—ahead of killing the enemy.”\textsuperscript{39}

More than this, counterinsurgents must be able to discriminate between different types of insurgents: “successful counterinsurgents...kill only those active, irreconcilable combatants who

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\textsuperscript{35} Kilcullen 2010, 4 and 36; \textit{Counterinsurgency Field Manual}, 166.
\textsuperscript{36} Kilcullen 2010, 4.
\textsuperscript{37} \textit{Counterinsurgency Field Manual}, 167.
\textsuperscript{38} Ibid., 48.
\textsuperscript{39} Kilcullen 2010, 4.
\end{flushright}
must be killed or captured, and where possible they avoid making more insurgents in the process.” 40 Only the most ideological insurgents need to be killed or captured, as they will never submit to government rule. Other fighters, who are members of local organizations and may be fighting for monetary reasons or out of fear, do not need to be killed, as once the COIN force establishes security and creates jobs the incentive to fight will dramatically decrease. Every local fighter that is killed generates resentment, creates a martyr, and may produce a revenge motive that causes family members to become supporters of the insurgency and potentially become fighters. 41

4. Make life better for people.

As the Counterinsurgency Field Manual says, “In the end, victory comes, in large measure, by convincing the populace that their life will be better under the HN government than under an insurgent regime.” 42 Insurgencies are often fueled by the absence of basic services like sewage disposal, clean water, trash pickup, and electricity, leading people to feel disenfranchised from the government and creating support for the insurgent cause, especially since insurgents may be the only providers of public goods in some areas. 43 To fix this, one of the most important things a counterinsurgent can do is conduct reconstruction work. 44

COIN fighters must evaluate which essential needs are unmet, and work their way up Maslow’s hierarchy, conducting small projects tailored to local needs. 45 “Money is ammunition,”

40 Ibid., 5.
41 Counterinsurgency Field Manual, 41.
42 Ibid., 44-45.
43 Ibid., 15-16, 61.
44 Ibid., 61-62.
45 Kilcullen 2010, 43-47.
the judicious use of which will cause people to reevaluate whether they have a better long-term future with the insurgent or the incumbent cause.\textsuperscript{46} Perhaps just as importantly, locals should staff local infrastructure projects, creating jobs for people whose only alternate source of income might be fighting for the insurgency. A local who is being paid by the incumbent will feel much less pressure to join the insurgency, and will also feel personally invested in reconstruction projects, creating enmity towards insurgents who attack infrastructure.\textsuperscript{47}

5. Build local capacity for governance and security.

Eventually, the counterinsurgent needs to move away from martial control and re-establish legitimate governance, and the best way to ensure this is to build local capacity to rule. The objective is to get the population to trust in the local government and start using institutional means to resolve disputes and to provide services, hence supplanting the insurgent’s efforts to rule.\textsuperscript{48} If people begin to buy in to the government, they will realize that their future lies with the incumbent, not the insurgent, and will begin to switch their support, assuming that they feel secure from insurgent intimidation.

Beyond institutions of government, the counterinsurgent must also set up local security forces: as T.E. Lawrence said, “Better the [indigenous people] do it tolerably than that you do it perfectly. It is their war, and you are to help them, not win it for them.”\textsuperscript{49} The population will view the application of violence by local forces as more legitimate than that committed by

\textsuperscript{46} Counterinsurgency Field Manual, 49.
\textsuperscript{48} Counterinsurgency Field Manual, 42, 47; Kilcullen 2009, 90-91.
\textsuperscript{49} Counterinsurgency Field Manual, 49-50.
outsiders (assuming that local forces are impartial). More than this, counterinsurgents must have permanent presence in many places, and the establishment of competent local security forces allows an occupier to move better-trained units out of secured areas and farther into insurgent-controlled territory. Often, as local forces are developed, it is best for them to work in tandem with the more competent occupier or federal level forces, integrating at a small unit level to ensure that locals are impartial and that they receive adequate training.

The above counterinsurgency practices tend to reinforce each other. By establishing persistent security through a high operations tempo, locals feel safe to denounce insurgents and to build relationships with the incumbent, thus helping the incumbent gain a deep and integrated intelligence picture of the local area and insurgent actors. With good intelligence, counterinsurgents can discriminate between guerilla leaders, paid local fighters, and civilians, allowing for the precise, low-collateral targeting of kinetic operations, which further improve security by damaging the insurgent network. Intelligence also leads the incumbent towards a better idea of how to approach reconstruction and stability operations to best win the minds of locals, which will in turn encourage locals to begin supporting the government, leading to more intelligence. With better security, derived from a strong presence and good intelligence networks, reconstruction projects can begin to take root and the local government can become much more robust, helping to ensure that insurgents cannot return.

It is important to note that the above behaviors are by no means a comprehensive list of the best practices for counterinsurgency. Some others are too tactical in nature, dealing with

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50 Ibid., 46.
51 Ibid., 177.
52 Counterinsurgency Field Manual, 224-225.
53 Ibid., 41.
specific situations and solutions (like building a berm around an isolated village to prevent insurgents and weapons from flowing in);\textsuperscript{54} some can be folded into the list above (for example, counterinsurgents should use “information operations,” like leaflets and radio broadcasts, to help win over the population, which could be rolled into the “intelligence” category);\textsuperscript{55} some are inconsistent in their rules of application (most of the time, COIN operations should be conducted by small units, yet occasionally well-orchestrated larger operations are necessary).\textsuperscript{56} Some of the behaviors could also be merged, but were not to ensure clarity when discussing mechanization’s impact on counterinsurgency—for example, a mechanized (or even dismounted) force could presumably provide persistent security without interacting with the population, even though persistent presence and constant interaction often go hand in hand. I have tried to pick the essential means by which military units can influence counterinsurgency outcomes through force employment.

**Military Level Variables that Influence Outcomes**

My argument rests on the idea that force employment alone is the best indicator of COIN outcomes. That said, there are certain things that counterinsurgents can do beyond force employment to increase their chances of winning.

\[\textsuperscript{54} \text{Ibid., 182-183.}\]
\[\textsuperscript{55} \text{Ibid., 160-164.}\]
\[\textsuperscript{56} \text{Counterinsurgency Field Manual, chapter 5, also page 51.}\]
Maximize Boots on the Ground

One such thing is to maximize the number of troops the incumbent uses in COIN operations. James Quinlivan authored the leading, contemporary iteration of this train of thought, arguing that past cases suggest a minimum threshold of 20 counterinsurgents (including local and foreign forces) for every 1,000 members of the host nation population, a position echoed in the *Counterinsurgency Field Manual*. The idea that more troops leads to better outcomes seems plausible, considering the force employment behaviors suggested above: more troops can allow for more persistent security in more places, more interactions with the local population as a result of higher troop densities, and can allow more soldiers to focus on reconstruction and host nation capacity building rather than on security tasks. Colin Jackson notes, however, that quantitative data taken from cases beyond Quinlivan’s initial set of six indicate problems with the “boots on the ground” hypothesis—there are a number of high force ratio failures, like in Vietnam, Algeria, Chechnya, and Cyprus, and also some low force ratio successes like in El Salvador and Oman. These outcomes indicate that a large counterinsurgent force size alone will not result in success, consistent with the idea that force employment is the primary driver of COIN outcomes. More boots on the ground will certainly help, but only if they are used properly.

Reconstruction Projects

Recent research by Eli Berman, Jacob Shapiro, and Joseph Felter using district-level data from the U.S. counterinsurgency campaign in Iraq indicates that increasing reconstruction

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57 Quinlivan 1995; *Counterinsurgency Field Manual*, 23.
58 Jackson 2008, 32-33.
spending reduces insurgent attacks.\textsuperscript{59} They privilege an explanation by which the government, through service provision, motivates the population to share information about insurgents with incumbent forces, thus enhancing the effectiveness of the military campaign. As the authors note, however, reconstruction spending is enhanced in effectiveness when the incumbent understands community needs, and when the government controls the territory on which projects are to be placed. If the military fails to employ its forces properly, and neither interacts enough with the population to understand community needs nor provides enough persistent security to ensure that reconstruction projects are not attacked, the effectiveness of reconstruction money may drop significantly.

\textit{Learning Organizations}

A good deal of literature also discusses the ability of militaries to learn and learning’s impacts on counterinsurgency outcomes. John Nagl’s classic comparison of British learning during the Malayan Emergency and American learning during the Vietnam War argues that militaries with more decentralized organizations that are closely linked to political authorities will be better equipped to switch from enemy-centric conventional war to population-centric counterinsurgency strategies, and also to tailor their solutions to local problems.\textsuperscript{60} Colin Jackson argues that militaries systematically misinterpret the counterinsurgency environment, imposing the heuristics provided by conventional enemy-centric approaches on a population-centric problem. When they do learn, it is because they feel a great deal of outside pressure to improve

\textsuperscript{60} Nagl 2002, chapter 3.
outcomes (without such task pressures during interwar years, militaries tend to lapse back into conventional routines and forget past lessons).\textsuperscript{61}

It is clear that learning and force employment are tightly coupled, as learning dictates the degree to which force employment is aligned with war aims. State militaries tend to enter COIN campaigns with enemy-centric strategies because of their roots in conventional warfare. If they learn to use a population-centric strategy, they will greatly improve their chances of success. The idea that learning is essential to proper force employment will appear throughout the paper, though I do not delve into the causal reasons for why learning happens. As both Nagl and Jackson note, however, it is very difficult for military organizations to learn in COIN campaigns, especially since most militaries greatly prefer to fight conventional wars.

\textit{Mechanization}

Mechanization, and the tanks, infantry carriers, artillery, and helicopters that come with it, give the incumbent a compelling means by which to perform counterinsurgency poorly.\textsuperscript{62} Combat vehicles by design give units the ability to traverse large swaths of ground quickly, making it easy to conduct raids and project presence into many areas without ever maintaining persistent security anywhere. Because of maintenance needs, mechanization means that more soldiers are tied down fixing vehicles rather than patrolling the streets. Mechanized units are also loath to leave the safety of their armored vehicles to patrol dismounted, meaning that they interact much less with the population, leading to Lyall and Wilson’s “information starvation.”

\textsuperscript{61} Jackson 2008, chapter 1.
\textsuperscript{62} See Lyall and Wilson 2009.
The presence of intimidating vehicles can alienate a population, adding a very conspicuous degree of separation between the locals and the counterinsurgent. To quote Kilcullen,

[American forces in Iraq] drive around in an armored box with three-inch-thick windows, peering out through out portholes at the little Iraqi fish swimming by. They can’t see us, and we don’t seem human to them. We are aliens—imperial stormtroopers with our Darth Vader sunglasses and grotesque and cowardly body armor. The insurgents have…isolated us from the population by…leveraging our penchant for technology and fear of casualties.⁶³

As Lyall and Wilson note, mechanized forces tend to use bigger bases to reduce logistical difficulties, making it hard for them to live amongst the population.

Mechanized forces also have a great deal of potential to cause collateral damage, simply because they can carry bigger weapons than their infantry counterparts. The heaviest vehicles, like main battle tanks and infantry carriers, tend to mount main guns designed to destroy other armored vehicles, with massive capability to cause damage. Even if a tank shoots directly at an insurgent position, the resulting explosion and shell fragments will likely cause structural damage to the building and may kill or injure nearby civilians. Similarly, armored personnel carriers mount smaller bore cannons (like the 25-millimeter cannon that the U.S. Army’s M2 Bradley carries), armed with high explosive rounds with great destructive capacity. Even the smaller vehicles carry heavy weapons like .50-caliber machine guns, which are known to penetrate walls with ease, potentially harming civilians even if the weapon is precisely targeted.⁶⁴ Additionally, tracked vehicles can cause damage simply by moving, destroying any cars, streetlamps, or buildings in their path. A scene from an April 7, 2004 U.S. Army counterattack against insurgents operating in Baghdad’s Adhamiya neighborhood is illustrative:

The U.S. soldiers did not move cautiously…With fellow soldiers at risk, courtesies to local traffic were no longer offered or granted. Cars veered for the shoulders as tanks and infantry fighting vehicles forced their way through the urban landscape…Arriving at the ambush site, the soldiers of the Ready First Combat Team aggressively attacked the enemy positions. Tank cannon boomed as big 120mm shells streaked toward enemy strong points, which crumbled before the weight of

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⁶³ Kilcullen 2009, 136.
the high-explosive, antitank rounds. High explosive rounds from Bradley 25mm electric chain guns slammed into insurgent positions. Machine gun and rifle fire peppered the area. Infantrymen dismounted from their Bradley fighting vehicles and cleared the area building by building, as Apache attack helicopters zoomed overhead to dominate the high ground... The enemy wilted before the violent counterattack...  

It is not difficult to imagine how the neighborhood looked afterwards.

Finally, it is possible that mechanized forces are ill equipped to perform reconstruction work or to build local security forces. Reconstruction requires engineers who are equipped for construction of public works like roads and structures and also capable of project management involving local contractors, while mechanized units may have mounted engineers whose main training is in operations that use explosives to clear paths through minefields and obstacles. Additionally, local forces are bound to be less well equipped than their mechanized incumbent counterparts, potentially causing compatibility issues that make training more difficult.

*Mechanization and Force Employment*

Mechanization only causes poor outcomes if vehicles and the soldiers associated with them are used improperly. While mechanization opens a window for militaries to bring enemy-centric approaches to a population-centric conflict, it also brings with it very useful capabilities. One of the most important of these is that, when just starting to establish dominance in an insurgent-held area (in military parlance a “non-permissive” environment), vehicles allow the incumbent to patrol out into the population without risking very heavy casualties.  

Infantry can use heavy vehicles as armored transportation to reach patrol sites and as a source of cover, allowing them to enter previously impassable areas and to begin establishing security, interacting with the population, gathering intelligence on the neighborhood’s “human terrain,” starting

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66 U.S. Army Colonel, e-mail exchange with author, September 2, 2010.
reconstruction projects, and establishing governance. Moreover, “in all instances you want to
ensure that you can, if it comes to it, win the direct fire fight against a determined enemy…tanks
and armored fighting vehicles are outstanding at providing this edge.”\(^67\) The incumbent can also
use heavy vehicles to assist local forces in their operations, giving them much needed confidence
in the face of enemy fire. The very presence of heavier vehicles like tanks can often lead all but
the most fanatical insurgent to reevaluate their attack plans, as tanks are nearly invulnerable to
many man-portable weapons and sport fearsome firepower. Without the advantages provided by
vehicles, counterinsurgents would find any move into an insurgent-held area costly, and the
heavy casualties such a move would entail could give insurgents a perceived victory, bolstering
their cause. This is not to say that incumbent forces ought to conduct all-out assaults into
insurgent held cities, but instead that COIN forces must eventually move beyond secured areas
and into non-permissive neighborhoods, where stiffer insurgent resistance can be expected.

Mechanized operations also need not cause damage to civilian life or property. Though
small arms fire from dismounted infantrymen has less potential to kill people and to damage
property, because of the relatively small size of rifle and machine gun munitions, it becomes
very inaccurate at longer ranges, increasing the potential for collateral damage. Armored vehicles
with more advanced targeting systems, by contrast, can project small munitions very accurately
over long ranges (the M1 Abrams tank, for example, mounts a 7.62mm machine gun with the
same targeting system used by its main gun, able to hit point targets at ranges of up to four
kilometers).\(^68\) So long as vehicle crewmen are very discriminating in their targeting, in their use
of larger caliber weapons, and are respectful of civilian traffic and structures when maneuvering,
vehicles need not inflict collateral damage. And if they do inflict collateral damage, the

\(^{67}\) Ibid.
\(^{68}\) U.S. Marine Corps Lieutenant Colonel, conversation with author, October 2010.
counterinsurgent can repair structures, and, where culturally acceptable, can ameliorate civilian casualties by paying out death and injury gratuities. Additionally, soldiers in armored vehicles are much less likely to overreact against insurgent provocations, even if they are getting shot at, as armor protection buys them the time and peace of mind necessary to make controlled and well thought out decisions.

In addition to the targeting benefits they provide, vehicles also bring with them capabilities that can enhance a dismounted force. First, mechanization allows COIN forces to retain a “quick reaction force” capability in the case of a large insurgent attack. Rather than exclusively relying on light infantry with small, man-portable weapons, which give the incumbent little edge over insurgents during a firefight (at least in terms of equipment, if not training), the presence of vehicles and helicopters provides counterinsurgents the capability to quickly reinforce besieged positions with more soldiers and heavy firepower (though it must be noted that overreaction to insurgent attacks can sometimes cause more harm than good).

Additionally, tanks and other armored vehicles can be used as stationary site security for critical buildings and infrastructure, using advanced imaging technologies (like thermal sights) to provide security even in inclement weather. The very presence of a tank or infantry fighting vehicle may deter insurgents from attacking a critical site, simply because of the overwhelming firepower the vehicle presents.

Mechanization provides very useful capabilities, but can only serve to augment dismounted operations—people, not vehicles, are the means by which counterinsurgency efforts...

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70 U.S. Marine Corps Lieutenant Colonel, conversation with author, October 2010.
71 Discussion of the benefits of mechanized forces in quick reaction forces derived from e-mail conversation between author and U.S. Army Colonel, September 2, 2010. See Counterinsurgency Field Manual, pages 48-49 for the dangers of overreacting to insurgent attacks.
72 Jason Lyall, e-mail message to author, September 15, 2010; See also Mansoor 2008.
are won. Any mechanized force in a COIN campaign must “de-mechanize” to a certain degree. There are many ways to gain “boots on the ground” in COIN, one of which is to transition tank and artillery crewman into infantrymen by retraining them. While in very rough terrain, where vehicles have trouble operating, units may be switched to infantry wholesale (the U.S. Army’s 1st Heavy Brigade Combat Team, 4th Infantry Division was retrained as a light infantry brigade before deploying to Afghanistan, for example), it is often best for units to retain some mechanization because of the very advantages mentioned above.73 To this end, unit commanders may decide to only de-mechanize part of their forces, while retaining some armored elements. Field artillery units operating in dense urban terrain, for example, have little use for their large-caliber, indirect fire guns, and can be converted to infantry; tank-mounted battalions might shift the majority of their companies (and the associated maintenance personnel) to light infantry duties, retaining some of their armor; mechanized infantry units might learn to use their armored personnel carriers in a fire support role, accompanying dismounted infantry on patrols rather than carrying mounted infantry until a firefight commences.74 In short, there is an optimal vehicle mix for counterinsurgency, which, based on a number of factors (like terrain), lies somewhere between all light infantry and all heavy armored forces, and involves tactical innovation that alters how forces employ their vehicles.

Additionally, the presence of light infantry is not a panacea for counterinsurgency problems—force employment is the only means to optimize success. Non-mechanized forces can still be used in enemy-centric ways, as conventional-minded commanders can see them as best used to conduct kinetic operations in difficult terrain. During the early phases of British operations in the Malayan Emergency, for example, light infantry were used to conduct large

73 Dennis Steele, “Training for Afghanistan on America’s High Ground,” Army (August 2010).
74 See Mansoor 2008 for dismounted field artillery operations in Baghdad; vehicle-infantry patrolling tactics from personal interview with U.S. Army Sergeant First Class, 2008.
sweeps through jungle areas, rarely finding insurgents and failing to secure the population centers from which the insurgency was based.\textsuperscript{75} U.S. Special Forces soldiers in Vietnam, who had very successfully established civilian irregular defense units for 40 villages in the Darlac province during 1961 and 1962, were shifted into conventional operations against the enemy Viet Cong forces, causing the program to falter.\textsuperscript{76} If not used to secure the population, and if not pushed to collect intelligence, light infantry will not create positive COIN outcomes. Infantry units may also be disadvantaged by their lack of armor protection, as their lower survivability may make them less inclined to leave base and get out amongst the population.\textsuperscript{77}

Moreover, while mechanized forces have big vehicles with big guns that can cause significant collateral damage, light forces can also cause a great deal of harm to civilians and their property. Infantry can be ordered to destroy villages, can participate in massacres, and can fire into crowds; raids or cordon-and-search operations without proper intelligence, so often used in the early phases of U.S. COIN campaign in Iraq, can cause property damage, result in the detention of innocents, and potentially kill civilians, generating bad blood from which recovery will be difficult.\textsuperscript{78} Without pressure from leadership, there is also little reason to believe that infantry would be more likely than mechanized units to engage in reconstruction, to establish local governance, and to train local forces. Like mechanized units, infantry in state militaries tend to have a hard-wired kinetic focus, which must be changed by altering doctrine and training before positive counterinsurgency work can begin.

\textsuperscript{75} Nagl 2002, chapter 4.
\textsuperscript{76} Ibid., 128-129.
\textsuperscript{77} U.S. Army Colonel, e-mail exchange with author, September 2, 2010.
Explaining Lyall and Wilson’s Outcomes

In the past several pages, we have established that mechanized forces can do several things to be effective on the counterinsurgency battlefield, and that light infantry forces can do things to perform poorly. Force employment, not equipment, is what really matters. Yet Lyall and Wilson’s results clearly show, in a well-controlled analysis of counterinsurgency campaigns since 1918, that incumbents with higher mechanization levels have had poor COIN outcomes. I privilege a doctrinal explanation for these outcomes—mechanized doctrine is more difficult to adapt to counterinsurgency than light infantry doctrine, making non-learning and heavily mechanized armies almost intransigent in the face of the changes needed to fight COIN campaigns. More than this, armies that commonly fight counterinsurgency campaigns or civil policing actions may have little need for armored vehicles, which makes their experience in fighting COIN campaigns and their level of mechanization impossible to de-confl ate in large-n analysis.

Modern mechanized doctrine has its roots in the German Army’s famous blitzkrieg advances of World War Two, emphasizing the use of armored and mechanized infantry formations independent from light infantry forces. The general idea is to use a combination of heavy vehicles and indirect fire from airplanes and artillery to overwhelm enemy defenses at a particular point, causing a breakthrough in enemy lines. Once the breakthrough is created, vehicles move through, rapidly advancing into the enemy’s rear, destroying logistical and command and control nodes and encircling as many enemy soldiers as possible. Air power is used behind enemy lines, destroying reinforcements before they can arrive to the battlefield.79

79 See John L. Romjue, “The Evolution of the Airland Battle Concept,” Air University Review (May-June 1984), for a discussion of the U.S. Army’s AirLand Battle doctrine, one of the more recent iterations of mechanized doctrine.
All the way down to the small unit level, armored doctrine is focused on using “fire, maneuver, and shock effect.”\textsuperscript{80} Perhaps one of the best modern examples of this strategy occurred during the U.S. attack on the Iraqi Army in Kuwait in 1991, where heavy mechanized forces broke through Iraqi border defenses before rapidly advancing into the Iraqi rear and encircling many Iraqi units.\textsuperscript{81} Nearly everything in mechanized doctrine runs against counterinsurgency principles: mobility is emphasized to get into the enemy’s rear as quickly as possible, firepower is maximized, and the offensive operations are a byword.

Light infantry doctrine, by contrast, focuses on offensive and defensive operations in terrain impassable to mechanized forces. Much focus is placed on dismounted movement techniques, on retaining persistent security for moving and stationary units, on patrolling to probe enemy positions or raid enemy encampments, and on small-unit tactical maneuvers using cover and concealment.\textsuperscript{82} Because light infantry units are not capable of surviving on lethal, open battlefields, infantry doctrine relies on the effective use of terrain where mechanized forces dare not go. While infantry doctrine is still enemy-centric, it has embedded within it many of the key tasks needed for COIN. Infantry train on dismounted patrolling, a skill needed to secure populations and maximize interactions with locals; they emphasize 360-degree security at all times, useful in deterring insurgent attacks; they plan for operations in rough and built up terrain, from which insurgents are most likely to draw support and operate.

Militaries, because of their conventional focus, tend to fight against the learning needed to adapt force employment to COIN campaigns. Since mechanized doctrine is so opposed to the principles of counterinsurgency, adaptation will be especially difficult for heavily mechanized

\textsuperscript{81} While some of the Iraqi’s best Republican Guard units were able to escape back into Iraq, many were mauled in the fighting and, all told, 63,000 Iraqi prisoners were taken (See USA Today 1991 Gulf War Chronology at http://www.usatoday.com/news/index/iraq/nirq050.htm, accessed December 29, 2010).
armies, which might be the source of Lyall and Wilson’s outcomes. In those militaries that do make serious efforts to adapt their force employment to counterinsurgency, we can expect that light infantry units will be able to switch from conventional to COIN operations more quickly than mechanized units, as infantry doctrine is more closely aligned to COIN than mechanized doctrine. Mechanized units simply have farther to go to shift their doctrine to the needs of counterinsurgency, both to change commanders’ mindsets and to retrain vehicle crews to be able to patrol dismounted. After time, however, if serious efforts are made to shift force employment away from an enemy-centric and towards a population-centric strategy, differences in outcomes between mechanized and light infantry should become nearly indistinguishable because of the very reasons discussed above. While mechanized forces may never outperform their light infantry counterparts in COIN, they can perform just as well.

83 U.S. Army Colonel, e-mail exchange with author, September 2, 2010.
III. Statistical Analysis

The following statistical analysis presents data which suggest that mechanization has been a poor indicator of counterinsurgency outcomes for U.S. forces in Iraq. The data paint a somewhat indeterminate picture, reflecting the difficulties of studying such a complex form of war. In contrast to Lyall and Wilson’s analysis, which used a large-n analysis of many different counterinsurgency campaigns across different states and time periods, my analysis occurs at the provincial level in Iraq, allowing for an in-depth examination of a single conflict. My key explanatory variables, meant as proxies for mechanization levels, are the average mechanization of combat units (measured in soldiers per combat vehicle) and the average combat vehicle weight within a province. My dependent variable, meant as a proxy for COIN outcomes, is the number of “Significant Activities” (SIGACTS), or reported insurgent attacks on Coalition of Iraqi government forces, lagged two months from the mechanization variables. To control for differences in the insurgency across provinces and time periods, I normalize SIGACT data by province and use fixed effects across province and time. It is important to note at the outset that data from Iraq is somewhat unreliable, and that the results of this statistical study are best seen as suggestions to be clarified in the case material. In the following, I first present the data, before going into the country-level and province-level regression models.

The Data

The dataset used for analysis incorporates a total of 289 observations at the province level on a monthly basis from December 2003 to October 2008. Six provinces were incorporated,
including Baghdad, Diyala, Nineveh, Salah ad Din, Tamim (dropped in the country-wide regression), and Babil. There were two criteria for a province to be incorporated into the dataset: first, a province had to have a significant U.S. troop presence (at least two Army battalions) for the duration of the conflict, and second, no Marines could be present in the province. The explanation for the first criterion is simple—if there are no soldiers and no mechanization level to be observed, the province is of little use to the current study. As a result, all but seven provinces were dropped. A Marine Corps presence would also contaminate the data, as the Marine Corps differs in training, organizational culture, equipment, and structure from the Army. This criterion removed Anbar province from the dataset completely, and also removed Babil province from December 2003 through February 2005. Additionally, four months were dropped (April, May, August, and November of 2004), as in those months significant U.S. forces were moved across the country in large operations to fight insurgents in Fallujah (April, May, and November), Baghdad (April and August) and Najaf (August). Accounting for these movements and their dates of departure from and return to their regular areas of operations proved difficult, and made an accurate picture impossible to construct.

Independent Variable: Measuring Mechanization

At the core of my mechanization measurement is the order of battle of U.S. Army forces in Iraq, which tells us Army combat battalions’ areas of operation (AOs) on a monthly basis. As I will explain later, this listing allows us to determine when units operated in certain provinces, from which mechanization levels can be extrapolated. For data ranging from December 2003 to May 2006, I created an original order of battle document using a combination of news reports,
which allowed me to track battalion areas of operation over time, casualty statistics, which placed military deaths from U.S. Army units in Iraqi towns, and also by going through each Army combat brigade’s deployment history, which gave a rough idea of areas of operation and when battalions deployed.\textsuperscript{84} The combination of the three methods has allowed a fairly complete picture of Army units’ placement and deployment lengths in Iraq, though it is possible that some units have been missed and that some areas of operation have been misrepresented. From June 2006 to October 2008, data were taken from the Institute for the Study of War’s \textit{Iraq Order of Battle}, created by researcher Wesley Morgan.\textsuperscript{85} It is important to note that some battalion AOs were along provincial borders, making it difficult to determine in which province they operated. In these cases, battalions were “split” in the dataset, with part of the battalion categorized as operating in one province while the remainder categorized in a second province. For the same reason, battalion AOs could not be obtained at the sub-provincial district level, as the data simply is not available—battalion areas of operation span district lines.

Additionally, there are a couple of significant differences between my order of battle and Morgan’s order of battle. First, I found it too difficult to ascertain the precise date of handoff between one battalion and the next, instead placing units in provinces when their main bodies arrived in the area of operation, and removing units when their main bodies departed their AOs. This results in some overlap between units, as an arriving unit will conduct a “hand-off” process with a departing unit before actually changing command. Morgan’s order of battle, compiled in current time as the campaign unfolded rather than retroactively (as mine was), was able to capture more precise change of command dates, resulting in no overlap. Additionally, my

\textsuperscript{85} The data is no longer available on-line. Link for the current order of battle is http://www.understandingwar.org/IraqOrderofBattle (accessed January 26, 2011).
database incorporates Army National Guard units, which were given significant areas of
operation in the first half of the Iraq campaign (phasing out by June, 2006), while the database
derived from Morgan’s order of battle does not (while he lists National Guard units, they
primarily conducted base and convoy security, with little relevance to COIN operations).

Measuring mechanization levels of units in Iraq is an elusive task. As the
counterinsurgency campaign started in late 2003, the units that had fought the battles to destroy
Saddam Hussein’s conventional forces began to leave Iraq, and new units, like the 1st Infantry
Division and the 1st Cavalry Division, began to flow in. The 1st Infantry and 1st Cavalry deployed
with an expectation that combat operations in Iraq had ended, and as such they entered Iraq
without much of their allotted Table of Organization and Equipment (TO&E), which dictates
how many vehicles each unit type is supposed to possess. Armor brigades and mechanized
infantry brigades deployed as motorized infantry, leaving most of their heavy tanks and tracked
armored personnel carriers at home in favor of much lighter Jeep-like HMMWVs (See Figure 1
for a description of major Army vehicle types). The 1st Brigade, 1st Cavalry Division, for
example, took only 14 tanks and 28 Bradley Infantry Fighting Vehicles out of its TO&E strength
of 88 tanks and 46 Bradleys. As the insurgency increased in intensity, and field commanders
realized that HMMWVs lacked firepower and survivability, they sent for more vehicles, and
over time their fleets got closer and closer to their original TO&E strength. One battalion, for
example, went to Iraq with ten tanks, and incrementally gained more over the campaign until
they ended with about 30. In the later stages of the Iraq campaign, units began to receive Mine

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86 See Lieutenant Colonel David Seigel, 2006, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 5 October, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
87 See Lieutenant Colonel Scott Kendrick, 2005, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 13 December, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
Resistant Ambush Protected vehicles (MRAPs) and significant numbers of up-armored HMMWVs, which they often used in place of heavier tracked vehicles.

<table>
<thead>
<tr>
<th>M1 Abrams Tank</th>
<th>M2 Bradley Infantry Carrier</th>
<th>M113 Infantry Carrier</th>
<th>Stryker Infantry Carrier</th>
<th>HMMWV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (tons)</td>
<td>69</td>
<td>33.5</td>
<td>13.5</td>
<td>19</td>
</tr>
<tr>
<td>Drive</td>
<td>Tracked</td>
<td>Tracked</td>
<td>Tracked</td>
<td>8-wheel</td>
</tr>
<tr>
<td>Main Weapon</td>
<td>120mm cannon</td>
<td>25mm cannon</td>
<td>.50-caliber machine gun</td>
<td>.50-caliber machine gun or Mk-19 grenade launcher</td>
</tr>
<tr>
<td>Top Speed (mph)</td>
<td>42</td>
<td>41</td>
<td>41</td>
<td>60</td>
</tr>
<tr>
<td>Armor</td>
<td>Very Heavy</td>
<td>Heavy</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Light</td>
</tr>
</tbody>
</table>

Note: Most vehicle information derived from globalsecurity.org and Tom Clancy’s Armored Cav (1994).88

Figure 1: Major Army Combat Vehicles

Attempting to sort out the vehicle fleets of each unit on a monthly basis would be an impossible task. Instead, I use their TO&E strength in combat vehicles and personnel to develop mechanization variables (See Figure 2 for numbers on vehicles, personnel, and mechanization levels of each type of combat unit). Rather than acting as an accurate indicator of actual mechanization levels on the ground, a focus on TO&E strength of combat units allows us to focus on how conventional units perform and adapt to the COIN environment, given their initial doctrine and equipment. By operationalizing mechanization this way, we see how force employment affects outcomes. A heavy mechanized unit, for example, can employ their vehicles

well, dismount many vehicle crews, and also convert personnel like cooks or field artillery crewmen into light infantry when possible, while still counting as a heavy mechanized unit in the dataset. In this way, we can tell how well armor or mechanized infantry units perform versus light infantry units. Units with military police, engineers, and logistical support functions are not counted in the dataset, allowing us to see how different provincial mechanization levels affect the employment of the whole force (these units are generally under the command of combat unit commanders at the brigade or battalion level).

<table>
<thead>
<tr>
<th>Battalion or Squadron Type</th>
<th>Equipment</th>
<th>Personnel</th>
<th>Soldiers per Vehicle</th>
<th>Average Vehicle Weight</th>
<th>MECH1 *WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Arms</td>
<td>29 M1, 35 M2, 4 M113</td>
<td>694</td>
<td>10.2</td>
<td>47.5</td>
<td>4.7</td>
</tr>
<tr>
<td>Armored Reconnaissance</td>
<td>23 M2, 30 HMMWV</td>
<td>565</td>
<td>10.7</td>
<td>16.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Armor</td>
<td>44 M1</td>
<td>343</td>
<td>7.8</td>
<td>69.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Mechanized Infantry</td>
<td>46 M2</td>
<td>569</td>
<td>12.4</td>
<td>33.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Armored Cavalry</td>
<td>41 M1, 41 M2, 6 M113</td>
<td>461</td>
<td>5.2</td>
<td>48.7</td>
<td>9.3</td>
</tr>
<tr>
<td>Infantry</td>
<td>20 HMMWV</td>
<td>669</td>
<td>33.5</td>
<td>4.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Stryker Infantry</td>
<td>89 Strykers</td>
<td>691</td>
<td>7.8</td>
<td>19.0</td>
<td>2.4</td>
</tr>
<tr>
<td>RSTA</td>
<td>30 HMMWV</td>
<td>373</td>
<td>12.4</td>
<td>4.0</td>
<td>0.3</td>
</tr>
<tr>
<td>Stryker RSTA</td>
<td>59 Strkyers</td>
<td>449</td>
<td>7.6</td>
<td>19.0</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Notes: Squadrons and battalions are equivalent organizations (squadron denotes status as a cavalry unit). Combined Arms Battalions and Armored Reconnaissance Squadrons are new formations, part of the heavy brigade combat team, created during the Army Transformation process between 2003 and 2008. RSTA Squadrons, or Reconnaissance, Surveillance, and Target Acquisition Squadrons, are also a type of new reconnaissance unit attached to an infantry brigade. MECH1*WEIGHT is the same as the MECHWEIGHT variable used in the regression analysis. Numbers were derived from U.S. Army Field Manual 3-90.61 The Brigade Special Troops Battalion (2006), the Federation of American Scientists US Army Table of Organization and Equipment (available at http://www.fas.org/man/dod-101/army/unit/toe/, accessed January 25, 2011), and Department of Defense news releases.

**Figure 2: Major Army Battalion Types, 2003 - 2008**

By aggregating the equipment and personnel numbers of the battalions in a province, I arrive at three separate but related mechanization measures (see Figure 3 for a correlation matrix
of the three variables, and Figure 4 for variable summary statistics). The first measure, MECH, is similar to that which Lyall and Wilson use in their dataset—number of soldiers per combat vehicle in a province (though my measurements are much lower in absolute terms than theirs, as I only include combat units while they include all military personnel). It is important to note that as MECH goes up, units become less mechanized, as they have more soldiers for fewer vehicles.

While MECH is an adequate indicator of mechanization levels, it does little to distinguish between vehicle types—it counts a four-ton HMMWV the same as a 70-ton main battle tank. To account for this discrepancy, I use a second measure, WEIGHT, which is the average weight in tons of the vehicles in a province. Vehicle weight is strongly correlated with the metrics generally used to evaluate combat vehicles. Heavier vehicles tend to be tracked (with higher off-road mobility), have more firepower, are larger by volume, and have much thicker armor than lighter, wheeled vehicles (see Figure 1). Finally, a third variable, MECHWEIGHT, is an aggregate of the two variables, achieved by multiplying the inverse of MECH (because as MECH goes up, mechanization level goes down) with WEIGHT, resulting in a measure of vehicle-tons per soldier. MECHWEIGHT gives us a measure of the total mechanization in a province, by taking into account both vehicle weight and number of vehicles per soldier. Because Tamim province exhibited very little variation in any of the independent variables (it had all light infantry units for 37 of 50 observations, and its standard deviation for MECHWEIGHT is one-third that of the dataset), it was dropped from the dataset.

89 Lyall and Wilson also have a different definition for combat vehicle than the one that I use. While they include tanks, armored personnel carriers, scout cars, and self-propelled artillery, I include all combat vehicles—infantry battalions, for example, have attached HMMWVs with anti-tank missile launchers, which I count but Lyall and Wilson would not.
Table 1: Correlations Between Key Explanatory Variables

<table>
<thead>
<tr>
<th></th>
<th>MECH</th>
<th>WEIGHT</th>
<th>MECHWEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEIGHT</td>
<td>-0.75</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MECHWEIGHT</td>
<td>-0.74</td>
<td>0.89</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 3: Correlations Between Key Explanatory Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH</td>
<td>14.3</td>
<td>7.88</td>
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<tr>
<td>WEIGHT</td>
<td>28.7</td>
<td>14.3</td>
<td>4</td>
<td>59</td>
</tr>
<tr>
<td>MECHWEIGHT</td>
<td>2.82</td>
<td>1.99</td>
<td>0.12</td>
<td>8.02</td>
</tr>
<tr>
<td>SIGACTS</td>
<td>417</td>
<td>537</td>
<td>10</td>
<td>3444</td>
</tr>
<tr>
<td>SIGACTS (Baghdad Dropped)</td>
<td>259</td>
<td>209</td>
<td>10</td>
<td>984</td>
</tr>
<tr>
<td>IRAQSIGACTS</td>
<td>3101</td>
<td>1829</td>
<td>324</td>
<td>7378</td>
</tr>
</tbody>
</table>

Figure 4: Variable Summary Statistics

**Dependent Variable: Measuring Outcomes**

My key dependent variable is the intensity of insurgent activity in a province, measured as the number of monthly insurgent attacks against Iraqi government or Coalition forces. The data is derived directly from “significant activity” (SIGACT) reports by Coalition forces, which capture information about “…executed enemy attacks targeted against coalition, Iraqi Security Forces (ISF), civilians, Iraqi infrastructure and government organizations.” The SIGACT data, kindly provided to me by Professor Jacob N. Shapiro at Princeton University, are from the Empirical Studies of Conflict project housed at the United States Military Academy. The dataset contains numbers of SIGACTS occurring from February 2004 to December 2008 at the district level (which I aggregate to the provincial level). The data exclude “coalition initiated events

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90 Berman, Shapiro, and Felter 2008.
where no one returned fire,” and also were filtered to remove attacks identified as directed at civilians or other insurgent groups.  

A significant challenge with the SIGACT data is that it varies dramatically by province (see Figure 5). While a change of 100 attacks in Baghdad from one month to the next would be unsurprising, that same change in Babil province would be unimaginable. Province population can largely explain these differences, as the correlation between SIGACTS by province and population size is 0.95. Because of the large differences in variance, proportionally equivalent SIGACT numbers would have disproportionate effects on regression coefficients. To avoid weighing provinces with high variances in attacks over those with low variances, I normalize SIGACTS by dividing each observation’s SIGACT count by the average number of SIGACTS of that observation’s province. Each Baghdad SIGACT number, for example, is divided by 1172. This treatment ensures that no province is weighted based on SIGACT variance that comes simply because of a higher SIGACT average. The actual equation for the treatment of each observation is 

\[
\frac{SIGACTS - \frac{SIGACTS_{\text{province mean}}}{SIGACTS} \times 100}{SIGACTS}
\]

which allows for ease of interpretation in terms of percentage deviance from the mean without influencing regression outcomes.

<table>
<thead>
<tr>
<th></th>
<th>Baghdad</th>
<th>Diyala</th>
<th>Nineveh</th>
<th>Salah ad Din</th>
<th>Tamim</th>
<th>Babil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1172</td>
<td>293</td>
<td>388</td>
<td>362</td>
<td>142</td>
<td>67</td>
</tr>
<tr>
<td>SD</td>
<td>882</td>
<td>241</td>
<td>188</td>
<td>199</td>
<td>77</td>
<td>45</td>
</tr>
</tbody>
</table>

**Figure 5: SIGACTS by province**

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91 Ibid.
92 1172 is the mean for Baghdad across all observations. The dataset incorporating all observations is later broken down into one dataset from December 2003 to June 2006 and one dataset from October 2006 to August 2008. SIGACTS are normalized for these datasets in the same way as for the full set.
In addition to normalization, SIGACTS were lagged two months from the mechanization variables. Units normally can take up to 90 days to get a handle on their environment after they arrive in theater, and insurgents often will test new arrivals by increasing attacks.\textsuperscript{93} A spike in attacks seen by a recently arrived unit is the result of the failures of the previous unit, rather than the new unit, which is accounted for by lagging the SIGACTS variable. One might debate how much SIGACTS ought to be lagged—I choose two months because it seemed reasonable that, as a unit nears the end of its 90-day acclimatization process, it begins to become responsible for COIN outcomes in its area of operations.

The SIGACT data have two primary weaknesses, identified in Eli Berman, Jacob Shapiro, and Joseph Felter’s paper on the effects of reconstruction on insurgent violence: first, they dramatically undercount sectarian violence, as incidents are only reported when U.S. forces are present. This problem is unavoidable, but is somewhat mitigated by my model, which controls for both province and time period, reducing the impact of provincial ethnic composition and also the ebb and flow of sectarian violence Iraq-wide. Second, the data “suffer from some measurement error in that units vary in their thresholds for reporting something as an incident.” A unit that sees many attacks a day may report fewer attacks than one that sees only a few attacks a week. There is little reason to believe that this reporting bias is non-random with respect to the explanatory variables, meaning that it ought to have little impact on regression results.\textsuperscript{94}

Independent of the flaws in the data itself, however, is a more important question: how well are SIGACTS correlated with counterinsurgency “success” or “failure?” There are

\textsuperscript{93} Lieutenant Colonel John A. Nagl, 2007, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 9 January, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].

\textsuperscript{94} Berman, Shapiro, and Felter 2008.
significant problems with SIGACT measures in this regard. While violence will be low in incumbent-controlled areas, it will also be low in insurgent-controlled areas, so that “a low level of violence indicates that someone is in control of a district, but does not tell us who.” If a unit stays inside its base, for example, it will see a low number of SIGACTS both because it will fail to report them and because it will not invite contact with the enemy. By the same token, an increase of troops in an area or a more aggressive commander will see more SIGACTS, because more soldiers operating outside their bases will yield more enemy contact, at least until the insurgency has been tamed. Additionally, a lack of insurgent activity does not necessarily mean that insurgents have ceded an area to the incumbent, as the insurgency may be regrouping for a renewed effort against incumbent forces. The violent Sadr City uprisings of April 2004, for example, saw large-scale violence after a long period of calm.

The problems with SIGACT data, while significant, do not preclude its use as an indicator of COIN outcomes. Especially at the provincial level, SIGACTS tell us whether the insurgency is strong enough to be on the offensive against incumbent forces, or if it has had to reduce activity because of counterinsurgent advances. The more towns that a COIN force controls, the less violence there will be; the more towns an insurgent controls, the more places an insurgent has from which to base attacks on incumbent forces. More than this, if insurgents are able to mount large numbers of attacks against incumbent forces, then they also are strong enough to coerce the population. While a temporary surge in insurgent attacks may indicate that counterinsurgent forces are gaining the upper hand, and that the insurgency has become desperate, it also indicates that the incumbent failed to root out the insurgency previous to that rise in attacks—by lagging attacks by two months (discussed in the next subsection), I partially

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95 Kilcullen 2010, 58.
account for this problem. Some of the more specific problems in using SIGACTS to explain the impacts of mechanization will be discussed later, when I evaluate the data.

**The Fixed Effects Model**

Controls are particularly difficult to establish for counterinsurgency studies, with their complex array of variables. There are several potential conflict-level explanations for counterinsurgency outcomes in the literature, like the presence of a foreign occupier, democracy as counterinsurgent’s form of government, and recent regime change, all of which are controlled by the use of a within-conflict versus cross-conflict model. There are also a multitude of variables, however, which vary dramatically by region in Iraq. Ethnic and religious fractionalization differs across each province studied, with the north having mixed Sunni and Kurd populations, and Baghdad having neighborhoods of Sunni and Shi’a. The insurgency takes on a radically different form by province and even within provinces, with groups being religiously, economically, and politically motivated to varying degrees. The external support coming from other states varies both in type and quality: some groups may be receiving the aid of foreign fighters flowing in from Syria, while others might benefit from weapons coming from Iran. The amount of oil production in each province is also highly variable, with some provinces having large oil reserves that could exacerbate insurgent activity. Additionally, terrain and urbanization differ greatly between provinces, giving insurgents varying degrees of sanctuary from which to operate.

It would be very difficult if not impossible to adequately control for all of the variables that might explain counterinsurgency outcomes, especially with the complexities particular to the
Iraqi insurgency. In order to create a robust model, however, good controls are needed—to this end, I used a fixed effects (FE) model based on province and time dummy variables. Fixed effects hold constant the average effects of each province and time period on the regression, controlling for time-invariant differences between the provinces and province-invariant differences between the time periods. In a FE model like the one I use, the effect of the mechanization variable is assumed to be identical across all provinces and all time periods, and the regression reports the average within-province and within-time effects on SIGACTS (this becomes important in evaluating the results of the regressions later).96

Province fixed effects eliminate structural variables like terrain and ethnic composition that vary by province and might impact the strength of the insurgency, as long as those variables do not change with time. The model does little, however, to control for interaction effects between mechanization and other variables that occur within a province—mountainous terrain in a province, for example, might cause heavily mechanized forces to perform worse than their light infantry peers. Time fixed effects control for countrywide time-based phenomena, like the troop surge in 2007 and the rise of al-Qaeda in Iraq, which could be driving the data. Time fixed effects are especially appropriate because four of the five provinces in the dataset (after Tamim is dropped) saw much of their insurgency in the area around Baghdad, and increasing insurgent activity in one area is likely to affect other areas. The geographic effects of the Baghdad area on the insurgency come through in correlations: the four provinces (Baghdad, Diyala, Salah ad Din, and Babil) with significant insurgent activity in the Baghdad area are all very strongly correlated with national SIGACT levels (all have correlation values above 0.91 with the other provinces), while the fifth province (Nineveh), far from the Baghdad area, is correlated at 0.43.

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One key problem with using fixed effects across provinces is that some variables (like ethnic composition, external support, or economic) may vary within provinces over time independent of the efforts of counterinsurgents, causing changes in SIGACTS that are not controlled or explained by the FE model. Insurgents in east Baghdad, for example, might get a new kind of bomb from Iran that emboldens them to attack incumbent forces more frequently. Many of the variables that vary across time and province are impossible to control for, as data simply are not available (especially on a monthly basis). Others, like numbers of troops in a province and amount of reconstruction aid allocated to each province, are outside of the scope of this study. This is a drawback of the fixed effects model, and somewhat limits the statistical analysis’s power. Regardless, fixed effects are a good way to control for the multitude of factors that can impact insurgent activity levels, and they allow us to prevent the variation that occurs across province or time from impacting the data.

Results and Discussion: Country Level Regressions

Figure 6 presents regression results for three models, each representing a different time period in the Iraq counterinsurgency campaign, along with supplementary models that drop single provinces or parse time periods differently, to better illuminate regression results. In each of the three models, a lone province had significant effects on the data, while the other provinces all had generally similar coefficients.

97 See Berman, Shapiro, and Felter 2008 for reconstruction’s effects on SIGACTS. The troop numbers within my dataset are not robust enough for use, as there is some overlap between unit deployments.
### Models 1 and 1A present a confusing picture of the effects of mechanization on COIN outcomes in Iraq. Without dropping Nineveh province, as WEIGHT and MECHWEIGHT get higher, so too do attacks, and while the coefficient on MECH is not significant, it points to a positive correlation between increasing mechanization and increasing SIGACTS. When Nineveh is dropped, however, WEIGHT and MECHWEIGHT flip their coefficients, indicating that heavier forces actually reduce SIGACTS across the dataset. MECH works in the opposite direction of WEIGHT and MECHWEIGHT (and gains statistical significance), as an increase of one soldier per vehicle causes a decrease of 2.14 percent of a province’s mean SIGACTS (in Baghdad, for example, this would mean a drop of 25 SIGACTS per month). The data partially support and partially refute Lyall and Wilson’s hypothesis that mechanization negatively impacts COIN outcomes.

My theory is based on the idea that mechanized forces can adapt their tactics to become good COIN fighters, and that, though they may start as worse performers than infantry, in

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 1A</th>
<th>Model 2</th>
<th>Model 2A</th>
<th>Model 3</th>
<th>Model 3A</th>
<th>Model 3B</th>
</tr>
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<tbody>
<tr>
<td>Dec 03-Aug 08</td>
<td>Dec 03-Aug 08</td>
<td>Dec 03-Jun 06</td>
<td>Dec 03-Jun 06</td>
<td>Oct 06-Oct 08</td>
<td>Oct 06-Oct 08</td>
<td>Aug 07-Oct 08</td>
</tr>
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<td>All Provinces</td>
<td>No Nineveh</td>
<td>All Provinces</td>
<td>No Diyala</td>
<td>All Provinces</td>
<td>No Nineveh</td>
<td>All Provinces</td>
</tr>
<tr>
<td>MECH</td>
<td>-0.83</td>
<td>-2.14**</td>
<td>1.08</td>
<td>0.48</td>
<td>-2.27</td>
<td>-0.64</td>
</tr>
<tr>
<td></td>
<td>(0.87)</td>
<td>(1.01)</td>
<td>(1.02)</td>
<td>(0.83)</td>
<td>(2.31)</td>
<td>(1.37)</td>
</tr>
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<td>WEIGHT</td>
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<td>-0.93***</td>
<td>-1.62***</td>
<td>-0.62</td>
<td>0.96**</td>
<td>-1.02***</td>
</tr>
<tr>
<td></td>
<td>(0.26)</td>
<td>(0.31)</td>
<td>(0.55)</td>
<td>(0.58)</td>
<td>(0.48)</td>
<td>(0.32)</td>
</tr>
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<td>MECHWEIGHT</td>
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</tr>
<tr>
<td></td>
<td>(1.82)</td>
<td>(2.41)</td>
<td>(3.28)</td>
<td>(3.82)</td>
<td>(2.84)</td>
<td>(4.25)</td>
</tr>
<tr>
<td>N</td>
<td>239</td>
<td>189</td>
<td>124</td>
<td>97</td>
<td>115</td>
<td>92</td>
</tr>
<tr>
<td>R-squared</td>
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<td>0.91</td>
<td>0.76</td>
<td>0.79</td>
<td>0.77</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%. R-squared values are averaged between the three mechanization variable regressions (values were similar across variables).
adaptive armies they will reach parity with their lighter counterparts. To test this hypothesis, I break the data into two time periods, from December 2003 to June 2006 (Model 2 and 2A) and from October 2006 to October 2008 (Model 3 and 3A), the division between which coincides with the beginning of a large positive change in U.S. Army counterinsurgency force employment strategies.98

Model 2, which looks at the first half of the conflict, presents data that run counter to both Lyall and Wilson’s theory. All three independent variables indicate that higher mechanization lowers SIGACTS, with WEIGHT and MECHWEIGHT both highly significant. These results at the surface indicate that mechanized units outperformed light units in the early phases of the campaign. When Diyala province is dropped (Model 2A), these effects retain the same coefficients but become statistically insignificant, leading us to believe that the regression results from Model 2 are merely suggestive.99

It seems unlikely that mechanized forces would statistically outperform infantry in times of generally poor force employment. Instead, the explanation for outcomes may lie in the use of SIGACT data as a proxy for COIN outcomes. In the early phases of the Iraq campaign, many mechanized units remained in their heavy vehicles, rather than trying to get out and interact with the populace, despite counterinsurgency’s requirement for dismounted operations.100 Insurgents may have been loathe to attack Coalition forces in the face of the overwhelming firepower and strong armor that mechanized units bring, causing SIGACTS to remain low in mechanized units’ areas of operation, even though insurgent networks and support from the population for the

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98 See Kilcullen 2009, chapter 3 for discussion of shift in U.S. Army force employment in the late 2006 and 2007 period. The 3-month gap between the datasets—from July 2006 to September 2006—is the result of a gap in data in Morgan’s Iraq Order of Battle document.
99 Diyala province was populated exclusively with different varieties of heavier units for all but eight out of 27 time periods, which drives the result.
100 The 4th Infantry Division, for example, often conducted “presence patrols” with their heavy vehicles, eschewing interactions with the population for the protection of their vehicles (Lyall and Wilson 2009).
insurgency may have remained strong. Light infantry units, by contrast, may have on average
done somewhat better at COIN, but without the implementation of an army-wide
counterinsurgency doctrine, most units may still have not had the proper force employment that
would cause a dramatic reduction in insurgent activity. Without the intimidation factor provided
by mechanization, and facing a strong insurgency, light units may have proved better targets for
attacks than their heavily armored peers, elevating SIGACT numbers.

Model 3, which examines the second half of the Iraq COIN campaign, also paints a
somewhat confusing picture similar to that of Model 1. While my theory suggests that an
adaptive army (like the U.S. Army in Iraq) will see mechanized and lighter forces begin to reach
parity in COIN effectiveness after proper force employment strategies are implemented, the data
seem to show the opposite effect on at least two of my three explanatory variables. While MECH
is not statistically significant (p=0.33), WEIGHT and MECHWEIGHT are highly significant and
positive. A 1-ton increase in average vehicle weight in Baghdad, for example, causes an increase
of 11 monthly SIGACTS. These results flip when Nineveh province is dropped from the dataset.
MECH remains insignificant (p=0.64), while WEIGHT changes sign and stays significant, and
MECHWEIGHT also changes sign and retains a low (though less significant) p-value of 0.15.
With Nineveh province in the dataset, increasing mechanization leads to more SIGACTS;
without Nineveh, increasing mechanization leads to fewer SIGACTS.

My theory is somewhat in consonance with the Model 3A (without Nineveh) result, as
mechanized forces bring capabilities to the counterinsurgency fight that may in certain situations
allow them to outperform light infantry. Because mechanized units were operating less from
their heavier vehicles than they did in the earlier stages of the campaigns, and had transitioned to
vehicles and force employment patterns similar to those employed by infantry units, the
“intimidation factor” explanation rings hollow in explaining Model 3A. Model 3B also helps shed light on the effects of TO&E mechanization levels on SIGACTS. Though the small N size (75) of Model 3B makes its results at best tentative, it appears that any effects of mechanization on SIGACTS fully dropped out by August 2007, as in the period from August 2007 through October 2008, none of the three mechanization variables is statistically significant, even with Nineveh province included. The data gently suggest that, a full eight months after the Counterinsurgency Field Manual was published, heavily mechanized and infantry units may have reached parity in COIN outcomes.

In both Models 1 and 3, Nineveh province had strong effects that skewed the data towards a negative correlation between increasing mechanization levels and SIGACTS. I forward two different explanations for this result. First, the dynamics of the insurgency in Nineveh, with its large Kurdish population, are far different than those of the Baghdad area (Nineveh’s correlation with Iraq-wide SIGACTS is 0.43), causing variation within the province and between time periods that cannot be accounted for with the fixed effects model. It is possible that periods of high mechanization simply happen to coincide with periods of high attacks in Nineveh province, especially since the mechanization variables tend to stay constant for several months at a time over the 50 Nineveh observations. Indeed, when time fixed effects are taken out of the regression equations for Models 1 and 3, the regression coefficients flip and become highly significant, making the results Models 1 and 3 look much like Models 1A and 3A.\(^\text{101}\)

\(^{101}\) When time fixed effects are taken out of the regression equations, and Nineveh retained, the results are as follows:
In **Model 1**: MECH coefficient is 4.25***, SE is 1.31; WEIGHT coefficient is -1.55***, SE is 0.38; MECHWEIGHT coefficient is -12.35***, SE is 2.61.
In **Model 3**: MECH coefficient is 14.06***, SE is 2.55; WEIGHT coefficient is -1.06, SE is 0.82; MECHWEIGHT coefficient is -9.53**, SE is 4.74.
Incorporating Nineveh province in a time FE model with the provinces that comprise the “Baghdad belt” appears to be inappropriate.

Additionally, mechanization may work differently in Nineveh than in the other provinces in Iraq. Since Nineveh is such a large province (the largest in the dataset), with a long and porous border with Syria, mechanized unit commanders in Nineveh may have seen significant advantages in utilizing their vehicles to patrol as much of the province as possible, projecting presence all over without providing persistent security anywhere. Pressures from higher commands to control the border and to police the towns may have led to the overextension of resources, and, in trying to accomplish a wide mission set, higher mechanization levels may have led commanders to shuffle troops across the province, without any unit having the time to get a good understanding of their environment. One highly mobile 79-soldier Stryker troop in northwestern Nineveh province in 2004, for example, was given responsibility for an area of approximately 865 square miles, in which they guarded oil wells near the town of Safaya, build water wells in Tall Afar, installed power generation units in Rabiah and Tall Afar, and oversaw the irrigation system throughout the region. In light of regression results in the next subsection, this explanation rings hollow in describing behavior in the later stages of the Iraq war—it appears that the impact of Nineveh in Models 1 and 3 was largely due to the problems of applying time fixed effects to Nineveh province.

It is difficult to paint a comprehensive picture of these regression results in the context of my theory. When looking at all of the data in Model 1, results appear to show that increasing mechanization has a negative effect on COIN outcomes, but when Nineveh province is dropped, the results partially flip. When only examining the first half of the counterinsurgency campaign,

102 First Sergeant Richard Gano Jr., 2006, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 26 January, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
the results suggest that mechanization has the opposite to the expected effect, as mechanized units seem to outperform light infantry units (though results are not statistically significant when Diyala province is dropped). I attribute this result to the use of SIGACTS as indicator of COIN outcomes, as the presence of heavy vehicles may have pushed insurgents to attack lighter targets. In the second half of the campaign, when we would expect positive changes in counterinsurgent force employment to bring light infantry and mechanized units to parity in effectiveness, mechanized units curiously appear to perform worse than they had in the first half of the campaign. When Nineveh is dropped (or time fixed effects are not used), however, the results flip, indicating that more heavily mechanized units reduce SIGACTS; when we only look at the last year of the campaign, there is no statistically significant effects of mechanization on SIGACTS, even when Nineveh remains in the dataset. The regression results show little support for Lyall and Wilson’s theory, as increasing mechanization shows no clear negative impact on SIGACTS, but also provide at best mixed support for my theory.

**Results and Discussion: Province Level Regressions**

With muddled country-level regression results, and significant problems created by both individual provinces and the time FE model, we must drill deeper into the data and look at individual province regressions (Figure 7). For ease of interpretation, only the MECHWEIGHT variable (which incorporates both MECH and WEIGHT) is included in the table, regressed on SIGACTS (with Iraq-wide SIGACTS used as a control variable to reduce time effects). The data from the individual province regressions show a somewhat clearer picture than the country-level regressions, a picture that is partially in line with my theory about force employment and

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103 Note that omitting Iraq-wide SIGACTS from the regression did not significantly change regression coefficients.
mechanization. Figure 8 lends clarity to the results by indicating the overall effect of increased mechanization on SIGACTS for each province by time.

<table>
<thead>
<tr>
<th>Province</th>
<th>Dec '03 - Jun '06</th>
<th>Oct '06 - Aug '08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghdad</td>
<td>-99.6** (45.1)</td>
<td>-233.8* (127.4)</td>
</tr>
<tr>
<td>Diyala</td>
<td>-21.89*** (7.2)</td>
<td>0.12 (29.0)</td>
</tr>
<tr>
<td>Nineveh</td>
<td>35.45** (13.7)</td>
<td>-39.5** (17.2)</td>
</tr>
<tr>
<td>Salah ad Din</td>
<td>14.16 (25.7)</td>
<td>212.5*** (54.8)</td>
</tr>
<tr>
<td>Tamim</td>
<td>16.1 (13.4)</td>
<td>--</td>
</tr>
<tr>
<td>Babil</td>
<td>5.39 (6.52)</td>
<td>-17.35*** (5.3)</td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

**Figure 7: Individual Province Regressions, MECHWEIGHT on SIGACTS**

<table>
<thead>
<tr>
<th>Province</th>
<th>Dec '03 - Jun '06</th>
<th>Oct '06 - Aug '08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghdad</td>
<td>DECREASE</td>
<td>DECREASE</td>
</tr>
<tr>
<td>Diyala</td>
<td>DECREASE</td>
<td>NO EFFECT</td>
</tr>
<tr>
<td>Nineveh</td>
<td>INCREASE</td>
<td>DECREASE</td>
</tr>
<tr>
<td>Salah ad Din</td>
<td>NO EFFECT</td>
<td>INCREASE</td>
</tr>
<tr>
<td>Tamim</td>
<td>NO EFFECT</td>
<td>--</td>
</tr>
<tr>
<td>Babil</td>
<td>NO EFFECT</td>
<td>DECREASE</td>
</tr>
</tbody>
</table>

Notes: Threshold to count as an “effect” at p = 0.10. Tamim province had no variation on mechanization in the second data period, thus yielding no regression results.

**Figure 8: Effect of Increasing Mechanization on SIGACTS**
The data from the early part of the Iraq conflict show some effects similar to those we saw in the country-level regressions. While half of provinces saw no significant effect of mechanization on SIGACTS, in two provinces increasing mechanization appears to decrease SIGACTS. As discussed above, mounted mechanized forces in a COIN conflict may have an “intimidation factor,” causing insurgents to attack light infantry that are perceived as more vulnerable, while failing to eliminate the insurgent network. Nineveh province, with its terrain that may push commanders to use the mobility of their mechanized forces at the price of persistent presence, sees an increase in SIGACTS as mechanization goes up.

As force employment shifts for the better in the later stages of the Iraq campaign, Nineveh sees a dramatic change in the effect of mechanization, with higher mechanization now decreasing SIGACTS. As the U.S. Army changed doctrine, mechanized unit commanders in Nineveh may have learned to avoid mobility in favor of persistent presence, yielding positive COIN outcomes. In all the other provinces except for Salah ad Din, increased mechanization continued to have either no effect or to decrease insurgent attacks. The “intimidation factor” explanation no longer applies in the later stages of the war, as mechanized units were using far fewer heavy tracked vehicles in favor of the same wheeled vehicles that infantry units were using, meaning that mechanized units appear to have at least reached parity with their infantry counterparts (except in Salah ad Din’s case). These results appear to lend limited support to my theory that a change in force employment can bring mechanized units to become good counterinsurgents, despite their initial training and equipment.
IV. Death Before Dismount? The 3rd Armored Cavalry Regiment in Tall Afar

Lyall and Wilson, in their comparative case study of the heavily mechanized 4th Infantry Division (4th ID) and the light infantry 101st Airborne Division (101st), present a convincing argument that mechanization was key in causing the 4th ID’s relative failure, while the 101st’s force structure, replete with light infantry, was key to its success. The 4th ID primarily conducted mounted patrols from their large forward operating base (FOB), seeking to intimidate the local population and project presence, and failed to gather intelligence or establish persistent security presence. Most raids failed to capture insurgents or weapons, innocents were wrongly detained, and mounted patrols angered the population by bullying their way through traffic and causing collateral damage during firefights. The results were predictable, as the 4th ID fueled rather than suppressed the insurgency. The 101st, by contrast, conducted constant dismounted patrols, with many units living amongst the population. Commanders were able to establish relationships with local leaders, soldiers deeply understood their areas of operation, and tips on insurgent activities flowed in, from which the 101st was able to accurately target raids and separate insurgents from the rest of the population. Where the 4th ID saw the highest rate of insurgent attacks of any division in the 2003-2004 time period, the 101st saw only one-fifth the Iraq-wide average, despite the two divisions’ adjacent areas of operation.

The evidence from Lyall and Wilson’s cases is in line with my argument: the 4th ID, with its poor force employment, was not successful in COIN operations, while the 101st used counterinsurgency best practices to yield good outcomes. Lyall and Wilson, however, conflate two very different variables—force employment and mechanization—and hence come to the

104 Lyall and Wilson 2009.
wrong conclusions about mechanization in counterinsurgency. While mechanization certainly gave the 4th ID the means by which to perform COIN poorly, it did not make outcomes inevitable.

The following two comparative case studies, of the heavily mechanized 3rd Armored Cavalry Regiment (3rd ACR) in Tall Afar from 2005-2006 and the light 3rd Brigade, 82nd Airborne Division (3/82) in Fallujah from 2003-2004, indicate that force employment, rather than mechanization, is a key indicator of COIN outcomes. While mechanization presents the opportunity and significant doctrinal and organizational incentives to perform poorly, heavy vehicles can actually prove helpful when used properly in counterinsurgency operations. Moreover, light infantry are no sure indicator of COIN success, as they, just like mechanized forces, can operate in ways counter to COIN precepts. The case studies are meant to flesh out the relationships between mechanization, force employment, and counterinsurgency outcomes by examining in some depth the operations of the two units.

Methodological Considerations

For my case selection, I use Harry Eckstein’s method of critical-case analysis: “by picking cases with extreme values on the key independent variables, one creates conditions where theories should be at their strongest (or weakest), making it unusually illuminating if a theory fails to perform as expected.” On Lyall’s variables, the 3rd ACR had a mechanization ratio of about 14.7 soldiers per vehicle, making it more mechanized than the 4th ID (16.7 soldiers

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105 For the case selection I am indebted to Austin Long, who suggested the use of these cases and provided me with a working paper of his (a criticism of Lyall and Wilson’s “Rage Against the Machines”) that helped guide my study.

per vehicle); the 82nd, by contrast, had a ratio of approximately 50 soldiers per vehicle.\textsuperscript{107}

Moreover, the 3rd ACR’s vehicle fleet was composed largely of heavy armored vehicles, while the 82nd Airborne is equipped only with lighter HMMWVs. The 3rd ACR also brought with it a substantial fleet of helicopters, nearly the same number as the whole of the 4th Infantry Division (83 for the 3rd ACR, 96 for the 4th ID), despite the 3rd ACR’s much smaller size.\textsuperscript{108} On my composite mechanization indicator (which incorporates vehicle weight and soldiers per vehicle), the squadrons of the 3rd ACR score a 9.3, while the battalions of the 82nd score a 0.1, the highest and lowest of any units in the U.S. Army.\textsuperscript{109} Importantly, while many of the mechanized Army units in Iraq only operated with portions of their standard Table of Organization and Equipment vehicle fleets, the 3rd ACR arrived with and used its full complement of vehicles.\textsuperscript{110}

From the outset, it is important to note that both the 3rd ACR and the 3/82 were reinforced by combat troops that dilute the mechanization variables. In the first case, a battalion of the 82nd Airborne Division (the 2nd Battalion, 325th Airborne Infantry Regiment, or 2-325th), one and a half years after the 82nd’s operations in Fallujah, was attached to the 3rd ACR for four out of nine months of the 3rd ACR’s operations in Tall Afar.\textsuperscript{111} For those four months, the 3rd ACR’s mechanization level on Lyall and Wilson’s variable decreases from approximately 14.7 to 16 soldiers per vehicle, while it falls on my composite indicator from 9.3 to 6.2 (dropping it from the most mechanized unit to the 3rd most mechanized unit type in the Army). The 2-325th was brought in because a specific neighborhood of Tall Afar had exceedingly dense urban terrain that

\textsuperscript{108} Ibid.
\textsuperscript{109} “Squadrons” and “battalions” are equivalent organizations, as are “troops” and “companies.” The discrepancy lies in the 3rd ACR’s heritage as a cavalry unit, as it retains traditional cavalry nomenclature.
\textsuperscript{111} Lieutenant Colonel Chris Gibson, “Battlefield Victories and Strategic Success: The Path Forward in Iraq,” \textit{Military Review} (September/October 2006).
lent itself to light infantry operations; the rest of the city, as well as the outlying towns, were largely under control of the 3rd ACR’s 1st and 2nd Squadrons. Interestingly, as I will discuss later, the 2-325th battalion often conducted mounted or partially mounted patrols.

In the second case, each battalion of the 3/82 operating in Fallujah was reinforced by a mechanized company team. The addition of these teams raises the 3/82’s mechanization value on Lyall’s variable from 50 soldiers per vehicle to about 43 soldiers per vehicle, and from 0.1 to 0.9 on my MECHWEIGHT indicator, or from the least mechanized to the third least mechanized among combat battalions. The attachments of new units to both the 3rd ACR and the 3/82 do not dramatically change mechanization levels, and are part of an Army-wide policy of cross-attaching mechanized and non-mechanized forces to maximize combat capabilities.

The 3rd ACR and 82nd Airborne’s deployments provide a reasonably good setting for a controlled comparison. While the 3/82 was responsible for Fallujah from September 2003 to March 2004, a period of seven months, the 3rd ACR controlled Tall Afar from May 2005 to February 2006, a period of nine months. During both periods, unit commanders were essentially left to figure out force employment strategies on their own while the insurgency raged on. If anything, the severity of the insurgency nation-wide was far worse during the 3rd ACR’s deployment, as national SIGACTS averaged 2,827 per month, versus the national average of 964 during the 82nd’s deployment. Additionally, the political bargaining that led to the alliance

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112 Conflicting accounts. In Gibson 2006, the battalion’s commander indicates that the 2-325th mainly occupied Sarai; Lieutenant Colonel Paul Yingling, 2006, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 22 September, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS] also indicates that the 2-325th was primarily in Sarai; Herrera 2006 indicates that the 2-325th also secured the adjacent Hassan Qoi neighborhood.
113 The mechanized company teams appear to have been comprised of two Bradley platoons and one tank platoon, though information was only available for one of the battalions. See Major Steven Wallace, 2010, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 6 October, Fort Leavenworth, Kansas, [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
114 Long 2009.
between the Sunni tribes and the U.S. and Iraqi government in late 2006 had not yet occurred in time for either case.\(^{116}\)

Fallujah and Tall Afar, though in geographically different areas, are also roughly comparable (in fact, Tall Afar was being called “the next Fallujah” by 2005).\(^{117}\) Fallujah, about 40 miles west of Baghdad in Anbar Province, lies in the Sunni triangle, an area noted for its support for the insurgency; Tall Afar, by contrast, is about 30 miles from the major city of Mosul in Nineveh Province, and is only 40 miles from the Iraq-Syria border, astride a key route for foreign fighters seeking to enter the country.\(^{118}\) Both towns are situated in large patches of desert, surrounded by rural agrarian communities. The towns also have generally similar population sizes, with estimates putting both between 200,000 and 400,000 people, and are of generally similar areas (Fallujah is approximately 10.5 square kilometers while Tall Afar is about 8).\(^{119}\)

The relative ethnic make-ups of Tall Afar and Fallujah are similar enough for comparative purposes. While Fallujah is almost entirely Sunni Arab, Tall Afar is about 95% Turkomen (an Iraqi Turkic ethnicity), and is 75% Sunni and 25% Shi’a.\(^{120}\) Tall Afar and the surrounding area also has members of the Yezidi religious group, Kurds (who exercise substantial influence in the area on the whole), and Sunni Arabs brought in by Saddam Hussein

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\(^{117}\) Packer 2004.


\(^{120}\) Hashim 2006, 369.
as part of an “Arabization” program. Whether ethnicity in Tall Afar makes it a more or less permissive environment for COIN as compared to Fallujah is difficult to say—while the religious and ethnic divisions in the area made sectarian violence a significant problem, ethnic divisions between the indigenous Turkomen population and foreign fighters may have made COIN efforts easier (though, as history later showed, Sunni Arabs in Anbar province also proved amenable to turning against foreign fighters in late 2006).

The data for the following case studies were derived from a wide variety of sources, including news reports, historical accounts, official Army documents, press releases from commanders, and Army-conducted interviews with soldiers who took part in the operations. As such, there are inherent inaccuracies and inconsistencies within the material—where possible, I have tried to triangulate evidence using multiple accounts. These kinds of flaws are inherent in any case work, especially that conducted during an ongoing conflict.

The Tall Afar Insurgency

The 3rd ACR arrived in Iraq in late February 2005, initially taking over an area in southern Baghdad. Soon after, however, the Regiment received orders to move north and take control of Tall Afar and the surrounding areas. By the 27th of April, the 3rd ACR, minus one of its three ground squadrons, was conducting combat operations in Tall Afar. They arrived to a

121 McConne, Scott, and Mastroianni 2008.
town that was a hotbed of the insurgency, commonly referred to as “al-Qaida’s town” and the “Wild West.”

Long before the 3rd ACR arrived, the 3rd Brigade, 2nd Infantry Division launched an operation dubbed “Black Typhoon” in September 2004, an assault meant to destroy Tall Afar’s building insurgency. While the operation retook the city, it displaced 150,000 inhabitants and pushed reconstruction “back to square one.” During “Black Typhoon,” a Shi’a commando brigade assisting with the operation reportedly killed several Sunnis, badly enflaming sectarian tensions. After the operation, Tall Afar was handed over to a single company of about 150 soldiers, and in November of 2004, insurgents launched attacks on police stations to retake the city. Tall Afar “was replacing Fallujah as a center of the insurgency,” and the Sunni police officers had all either quit the force or joined the insurgency by January 2005.

Without any significant Coalition presence in the city, the town quickly divided on sectarian lines. The Sunnis, seeing the rise of a Shi’a dominated national government, feared marginalization and future attempts to “Shi’ify” Tall Afar. They formed a marriage of convenience with foreign extremists flowing in across the Syrian border, and the Shi’a and Sunni communities “became armed camps in direct military competition with one another.” Sectarian violence became pervasive, and “abductions and executions were the order of the day,” with headless bodies turning up in busy traffic circles. The all-Shi’a police force sent out death squads from their fortress that overlooked the city, only venturing forth to kill and abduct

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124 Herrera 2006, 127.
125 Tyson 2006.
126 Herrera 2006, 128-129.
129 McCone, Scott, and Mastroianni 2008.
The mayor of the town was a pro-insurgent Sunni, and the police chief a Shi’a, both of whom supported the violence. The Iraqi Army forces stationed in the area were unable to provide even minimal security, and occasional sweeps from US Army units did little to abate the insurgents’ operations. Tall Afar had become a key town for the insurgency, a staging point for extremists entering Iraq, such that Abu al-Zarqawi, head of al-Qaida in Iraq, was rumored to operate in the area.

Tall Afar had significant structural features beyond ethnic fractionalization that enabled the insurgency. Public services were non-existent, as sewage flowed through the streets and the city lacked a trash pick-up service; a 75% unemployment rate gave residents significant economic incentives to join the insurgency; the town’s layout, partially made up of dense housing and narrow alleyways, gave insurgents plenty of places from which to launch attacks; and 90% of the town had very little education, making them susceptible to insurgent rhetoric. A system of about eighty tribes also helped the insurgency organize, as many of the sheiks that headed the tribes were supporters of the various violent factions in the city. Importantly, many disenfranchised Sunnis who had been part of Hussein’s military resided in Tall Afar, bringing significant martial skills to the insurgent cause. Before the 3rd ACR’s tenure, the insurgency

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130 Herrera 2006, 129.
133 Hashim 2006, 369; Herrera 2006, 133; Mc Cone, Scott, and Mastroianni 2008, 9. See David Pratt, “The battle to control the streets of Tal Afar Iraq,” Sunday Herald, January 1, 2006, for McMaster quote about the illiteracy amongst the population in Tall Afar: “The enemy is very good at disinformation and propaganda, especially here in Tal Afar where there is a high level of illiteracy…Of the people we capture, 90-per cent have very little education and are very susceptible to what is virtually brainwashing.”
134 Herrera 2006, 127-133.
135 Ibid., 127.
had become highly organized, with cells centered on functions like mortar attacks, sniper attacks, killing and kidnapping, and propaganda operations.\textsuperscript{136}

**Breaking the Mold: The 3\textsuperscript{rd} ACR’s Pre-Deployment Training Program**

The 3\textsuperscript{rd} ACR that proved so successful in Tall Afar had deep roots in mechanized warfare, doctrinally designed to perform forceful reconnaissance ahead of other armored units. In the 1991 Persian Gulf War, it led U.S. Army forces into Iraq on a *blitzkrieg*-style drive to the Euphrates River; one of the mechanized troops of the 3\textsuperscript{rd} ACR’s sister unit, the 2\textsuperscript{nd} ACR, was famously led by then-Captain H.R. McMaster to destroy an entire enemy mechanized brigade.\textsuperscript{137} That same McMaster, now a Colonel, led the 3\textsuperscript{rd} ACR in Tall Afar.\textsuperscript{138}

The Regiment, organized and trained for armored offensives, had great difficulty adapting to counterinsurgency warfare during its first tour in Iraq. It made extensive use of its mobility to cover large tracts of Anbar province, settling in to an “aggressive armor-based patrolling and searching” routine, and failed to interact enough with the population to develop a comprehensive intelligence picture.\textsuperscript{139} While some commanders did implement alternatives to conventional tactics, the 3\textsuperscript{rd} ACR’s approach on the whole was heavy-handed. The results were vaguely analogous to those experienced by the 4\textsuperscript{th} Infantry Division, as the Regiment conducted

\textsuperscript{137} See Clancy 1994.
\textsuperscript{138} McMaster, at the time of writing, is a Brigadier General.
\textsuperscript{139} McCone, Scott, and Mastroianni 2008, 3.
raids on bad intelligence and the insurgency increased in intensity.\textsuperscript{140} The troopers’ unofficial motto, “death before dismount,” indicates the strength of 3\textsuperscript{rd} ACR’s mechanized heritage.\textsuperscript{141}

As the 3\textsuperscript{rd} ACR trained to conduct COIN operations for its second deployment, it encountered some organizational resistance, and one of the three squadron commanders was relieved of duty for failing to internalize the Regiment’s new mission.\textsuperscript{142} Even while in Iraq, some of the older non-commissioned officers (NCOs) had difficulty adapting to non-kinetic operations. As one Captain remarked, “I found it difficult…to take some of the NCOs that I had who were very lethally focused in OIF I and try to convince them of the importance of being less lethally focused…They didn’t get it.”\textsuperscript{143}

In a move preceding the Army-wide shift to a counterinsurgency strategy, McMaster installed a training program that radically shifted the 3\textsuperscript{rd} ACR’s focus away from conventional warfare and towards a population-centric approach. The Regiment’s fundamental theme throughout its training and deployment was “Do not do the enemy’s work,” meaning that soldiers were supposed to treat the population with respect and thus keep fence sitters from joining the insurgency.\textsuperscript{144} A lengthy reading list of COIN classic texts was distributed to officers, and soldiers were forbidden to use the derogatory term “hajji” to describe Iraqis.\textsuperscript{145} McMaster took great pains to ensure that a portion of his force learned the local language, sending two

\textsuperscript{140}Packer 2004; McCones, Scott, and Mastroianni 2008.  
\textsuperscript{141}McCones, Scott, and Mastroianni 2008.  
\textsuperscript{142}Ricks 2006, “The Lessons of Counterinsurgency.”  
\textsuperscript{143}Major Michael Davis, 2010, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 1 November, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].  
\textsuperscript{144}McCones, Scott, and Mastroianni 2008.  
soldiers out of every platoon to nearby Pike’s Peak Community College to learn Arabic for two
months.\textsuperscript{146}

Perhaps more importantly, McMaster put in place realistic, scenario-based training that
would prepare his soldiers for a different kind of war. He eschewed training at the Army’s Joint
Readiness Training Center, where the 3\textsuperscript{rd} ACR had been trained in 2002 for conventional
warfare, instead constructing an Iraqi-style village as a training ground at the unit’s home in Fort
Carson, Colorado, and coupling the new facilities with an original training regimen.\textsuperscript{147} Soldiers
conducted patrols through the village, interacting with Arab-Americans and other soldiers who
dressed in \textit{dishdashas} (or tunic) to simulate contact with real Iraqis, and were only given
information by “locals” after they sat down three or four times for tea. The 3\textsuperscript{rd} ACR’s soldiers
learned how to search locals’ homes without alienating the inhabitants, and trained to operate
checkpoints through which would pass drunks, suicide bombers, and pregnant women.
Throughout, the Regiment’s leadership emphasized that only a small portion of the population
were hardcore insurgents that needed to be dealt with coercively.\textsuperscript{148}

One of the key changes for many of the 3\textsuperscript{rd} ACR’s soldiers was that everyone would learn
to fight as dismounts, in addition to their normal combat or logistical tasks. As one tank NCO
put it,

\[
\text{[W]hat really changed I think…was, I don’t care if you’re logistics, I don’t care if you’re a cook, I
don’t care if you’re a mechanic…you’re a United States Army soldier. And you need to learn to}
\text{fight. Mcmaster…nailed into the head [of] everybody their primary focus was as a soldier}
\text{fighter…everybody got training in dismount training and four man stack training [to clear}
\text{buildings] and live fire convoy exercises.}\textsuperscript{149}
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Dismounted training was to pay significant dividends when the 3\textsuperscript{rd} ACR arrived to Tall Afar, as
soldiers would often operate on foot, without their vehicles.

\textsuperscript{146}McCone, Scott, and Mastroianni 2008; Conflicting account in Ricks 2006, “The Lessons of Counterinsurgency,”
which says that 1 in every ten soldiers received language training for three weeks.
\textsuperscript{147}McCone, Scott, and Mastroianni 2008.
\textsuperscript{148}Ibid.; also see Packer 2004.
\textsuperscript{149}McCone, Scott, and Mastroianni 2008.
Operations in Tall Afar

The next two subsections deal with the initial operations in the city and surrounding areas, with a focus both on mechanization’s impact and the 3rd ACR’s partial “de-mechanization” as it retook Tall Afar. The third subsection, which looks at COIN operations after the major Operation Restoring Rights that cleared the city, examines the 3rd ACR’s force employment and use of mechanization in terms of the COIN best practices from Section II.

Preparatory Operations in Tall Afar

Upon arriving Tall Afar, the 3rd ACR undertook a four-month long campaign to weaken the insurgent infrastructure around the city and to develop an intelligence picture of the area, all in preparation for Operation Restoring Rights, which was to clear Tall Afar itself. The “tactical patience” displayed by the 3rd ACR in not immediately raiding the city stood in stark contrast to previous operations in the area.150 To this end, 1st Squadron was sent towards the Syrian border, in efforts to stanch the flow of foreign fighters entering Iraq.151 Additionally, the 3rd ACR began subduing the several small towns that surrounded Tall Afar. In June, a cavalry troop entered the village of Biaj, which lay along the route to Syria, and cordoned off the town in conjunction with Iraqi forces, installing a patrol base and reconstituting the police force.152 The community of Sheik Ibraheem, a known al-Qaida stronghold near Tall Afar, was cordoned off by a tank platoon while logistical troops entered the town and screened individuals; operations were conducted in

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151 Herrera 2006, 131.
152 See Davis 2010 for an interview with the commander of the troop that operated in Biaj.
the small town of Muhalibiya on Tall Afar’s outskirts to keep insurgents off balance. In the immediate lead up to Operation Restoring Rights, part of 1st Squadron was redeployed to the town of Avgani and to other smaller communities to the north of Tall Afar, in a bid to establish persistent security. Heavy vehicles, with their accurate targeting systems and long-range weapons, proved especially useful in the desert, where insurgents would attempt to engage U.S. forces at great distance.

The 3rd ACR also conducted significant kinetic and non-kinetic operations within the city. The first priority was the main road around the city, which had long been a target for insurgent IED attacks and ambushes. The road was put under around the clock surveillance, and attacks continued for about two more weeks, until tanks were brought in to kill the offending insurgents with overwhelming firepower. Operations in the city soon followed, as 2nd Squadron executed several cordon-and-searches and targeted raids to develop an intelligence picture. These operations drew the insurgents into pitched battles, and the 3rd ACR’s significant firepower resulted in large insurgent casualties. Insurgents realized that such high casualty levels were not sustainable, and soon switched to harassment attacks with improvised explosive devices (IEDs), sniper fire, and mortar attacks. A major coup came as an intelligence tip allowed 3rd ACR soldiers to capture 26 of the insurgency’s ringleaders. As the Squadron stepped up its operations within the city, insurgents fled to outlying towns, where joint U.S.-Iraqi Army operations were able to capture significant numbers of them. In most circumstances, Iraqi Army and U.S. forces operated together, providing the Iraqis with critical combat experience and heavy

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153 Herrera 2006; See Brookshire 2010 for operations in Sheik Ibraheem.
154 Yingling 2006.
155 Herrera 2006, 126.
156 McCone, Scott, and Mastroianni 2008.
equipment while also utilizing the Iraqi’s dismounted infantry and cultural awareness.\textsuperscript{157} Though the 3\textsuperscript{rd} ACR maintained a very high operations tempo, it took care to focus on targeted raids and searches based on specific intelligence.\textsuperscript{158}

Units that did not have traditional direct combat roles played a significant part in these early operations. The artillery battery, for example, sent out multiple patrols a day in an area of operations that included a small piece of Tall Afar and several nearby villages in the desert. The artillerymen commonly operated dismounted, calling in tanks from other units when fighting got especially heavy. During some of the 3\textsuperscript{rd} ACRs operations into the city, the battery also controlled traffic flowing into and out of Tall Afar.\textsuperscript{159} Even the Regiment’s logistics squadron and chemical warfare platoon, supported by heavy vehicles, conducted cordon-and-search operations in surrounding towns.\textsuperscript{160}

Armored vehicles proved critical in these shaping operations, and, to give dismounts protection and firepower as they conducted operations, “each mission was a mix of dismounted and mounted elements with tanks, Bradleys, and aviation providing overwatch.”\textsuperscript{161} The vehicles provided the only way into the city without risking heavy casualties, and a general order was put out that forces were not to enter the Tall Afar with anything less than two Bradleys or two tanks.\textsuperscript{162} As commanders moved in to the city to meet with local sheiks and to conduct operations, mechanization proved a deterrent by which to ensure that each foray into Tall Afar did not turn into a large firefight against a still-strong insurgency. As McMaster himself noted,

\textsuperscript{157} McMaster 2005; see also Herrera 2006.
\textsuperscript{158} McCone, Scott, and Mastroianni 2008, 14.
\textsuperscript{159} Major James Dayhoff, 2008, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 17 September, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
\textsuperscript{160} Brookshire 2010.
\textsuperscript{161} Herrera 2006, 127.
\textsuperscript{162} McCone, Scott, and Mastroianni 2008; Pratt 2006; Captain Jon M. Trolla, 2006, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 10 April, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
what the Iraqis lacked (and the American forces had) were “some more mobile protected platforms…so that they can overmatch the enemy in tactical engagements.”

The efforts in the lead-up to Operation Restoring Rights were meant to shape the COIN campaign by restricting the insurgents’ freedom of motion throughout and around the city and to gain a picture of the “human terrain” within the city. In addition to raids and searches, McMaster’s commanders used non-kinetic approaches to shape outcomes. For example, the commander of 2nd Squadron reportedly negotiated with the leaders of one recalcitrant neighborhood for two months before staging operations there, rather than simply using heavy vehicles to force his way in. He also reached out to both Sunni and Shi’a leadership in an attempt to build relationships, despite pressures from Shi’a sheiks to play sides, and tried to recast the insurgency as Iraqi versus extremist rather than Sunni versus Shi’a.

Battalion intelligence staff also went to great efforts to develop a map of kinship and tribal lines in Tall Afar and out to the surrounding towns, allowing them to track “who fought whom and why.”

**Clearing Tall Afar: Operation Restoring Rights**

After four months of collecting information and conducting targeted raids into the city, the 3rd ACR prepared for the massive clearing operation that was to sweep Tall Afar. At the suggestion of the Iraqi leadership, an eight-foot tall berm was constructed around the city and covered with direct and indirect fires, to limit entry to and exit from Tall Afar to a few major checkpoints. The checkpoints were staffed with U.S. Army soldiers, Iraqi police, Iraqi Army

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165 Tyson 2006; Packer 2004.
166 Tyson 2006; see also Thomas E. Ricks, *Fiasco* (New York: Penguin Press, 2006), 423.
personnel, and masked informants who attempted to pick insurgents out of the foot traffic. In a bid to reduce damage to the civilians of Tall Afar, the town’s population was ordered to evacuate, with some staying in a refugee camp set up by the 3rd ACR near the city. While some insurgents slipped through the cordon and out of the town, many were caught.167

In early September 2005, after Tall Afar was cleared of civilians, a precision artillery barrage was fired at known insurgent locations throughout the city, and a force totaling 3,000 U.S. soldiers and 5,500 Iraqis began to methodically sweep the town.168 The operation incorporated combined arms tactics, with U.S. tanks leading the supporting Iraqi infantry into the city. The tanks “absorbed any energy from [the insurgents’] rocket-propelled grenades and machine guns,” affording the lightly armored Iraqi forces significant protection, while the dismounted Iraqi soldiers were able to “go into every culvert, on top of every rooftop, [and] through every room,” which 3rd ACR vehicles could not reach.169 Units of the 3rd ACR also conducted dismounted operations, using a procedure by which one cavalry troop would clear a part of the city while a second set up a cordon, standing ready to repel insurgent attackers.170 Whenever the 3rd ACR or Iraqi Army learned of booby-trapped houses or insurgent strongpoints from citizens’ tips or through ground operations, precision artillery fires and attack helicopter strikes were called in.

Though the offensive used overwhelming firepower to suppress insurgents, collateral damage was minimized as much as possible through precise targeting—while many buildings were demolished, the destruction was nothing like that which occurred during the November

167 Note that some of the town’s population refused to evacuate, especially in the Sarai district, See Herrera 2006, 140; McCone, Scott, and Mastroianni 2008; Ricks 2006, “The Lessons of Counterinsurgency”; Yingling 2006.
168 Brookshire 2010; Herrera 2006, 139-144.
170 Davis 2010; Yingling 2006.
2004 Marine-led assault that devastated Fallujah. The operation killed about 150 insurgents and detained hundreds more (with three civilian deaths), and, more importantly, insurgents were temporarily pushed out of the city, allowing citizens to return to normal life: “from all accounts, [the streets] now bustled with activity” where before Tall Afar had been “a ghost town.”

Immediately after combat operations ended (about a week after they had begun), locals began to return to their homes and humanitarian and reconstruction operations began. As one tank crewman noted,

As people were let back in, we were giving them [meals]. We were giving people water…giving money to those whose houses were destroyed. If you were a citizen…we gave [you] about a hundred dollars apiece….to help paint or rebuild a little…There were also contractors who came in, Iraqi contractors, that came in and redid the streets and immediately started working on some of the infrastructure.

Critical to mitigating the collateral damage done during the assault, locals were immediately offered assistance in rebuilding their neighborhoods and their houses upon returning.

_Holding and Rebuilding Tall Afar: Counterinsurgency Operations Post-Restoring Rights_

Where previous U.S. clearing operations in Tall Afar had proven clumsy and short lived, the 3<sup>rd</sup> ACR had a plan in place to provide persistent security to the town’s inhabitants after Operation Restoring Rights (ORR) ended. As each neighborhood was cleared, the 3<sup>rd</sup> ACR established company-sized patrol bases, and by the end of ORR, 29 bases were operational throughout the city, along with traffic control points at every major intersection. Rather than living on large forward operating bases, 3<sup>rd</sup> ACR soldiers lived amongst the population, building

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172 See Tyson 2006 and Herrera 2006, 142 for casualty counts; See McCon, Scott, and Mastroianni 2008 for Tall Afar before and after operation.
173 McCon, Scott, and Mastroianni 2008.
174 Ibid.
relationships and sharing risks. These bases, in addition to constant patrols, gave American and Iraqi forces “a view of every major stretch of road in the city,” and Tall Afar was “awash with patrols by thousands of Iraqi and U.S. troops.” As security increased, the 3rd ACR was able to break down into smaller elements and gain even more geographic coverage, establishing platoon-sized patrol bases and scaling back patrols to squad and even section level. Where Tall Afar had experienced about seven insurgent attacks per day before Operation Restoring Rights, attacks dropped to about one per day by late January 2006. Importantly, Iraqi or U.S. forces, rather than the insurgents, were the initiators of most violence. The profusion of patrol bases throughout the city made raids on insurgents more effective, as counterinsurgent forces could converge on insurgent safe houses from multiple directions, making escape difficult.

In conjunction with persistent security efforts, the 3rd ACR undertook a large reconstruction campaign that brought in the U.S. State Department, U.S. Agency for International Development, and, perhaps most importantly, the Iraqi government. Projects began in earnest to emplace essential services like sewage treatment, running water, electricity, and trash pickup. Before Operation Restoring Rights, about 60% of the city had electricity and 40% had running water; by late January 2006, “virtually all the city had both.” Police stations were reconstituted, parks were constructed over bombed out sites, and 35 education projects

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177 Herrera 2006, 144. A company (or troop) is about 160 personnel, a platoon is about 40 personnel, a squad about nine, and a section about four.
180 See McMaster 2006; also Counterinsurgency Field Manual, 183-184.
helped the city’s children start going back to school.\textsuperscript{181} Reconstruction projects were started only after discussions with local leaders—as one officer remarked, “we had to meet and drink \textit{chai} maybe three times with the same local leader before we…could even begin talking about making changes to the city.\textsuperscript{182} As a 3\textsuperscript{rd} ACR officer remarked, “once we got that money flowing, it really broke loose intelligence…once people felt secure and they started seeing their daily lives getting a little better, intelligence just poured in.”\textsuperscript{183} The 3\textsuperscript{rd} ACR also made significant progress in setting up governance structures within the town by standing up a court system and by setting the stage for the Iraqi government to conduct successful elections (in elections the previous year, only 4,500 had shown up to polls, while in December 2005 voter turnout was around 90\%).\textsuperscript{184}

By virtue of the proximity of U.S. and Iraqi forces to the population, counterinsurgents were able to generate large amounts of actionable intelligence. In stark contrast to the intelligence environment previous to Operation Restoring Rights, tips on insurgent activities flowed in, both through civilians engaging patrolling soldiers and by citizens’ calls to a tip hotline. As soon as new insurgent fighters would move in to the city, civilians would often inform either Iraqi police or U.S. forces, leading to reconnaissance and raids; when insurgent attacks happened, people would often point out the perpetrators.\textsuperscript{185} By living amongst the population, units began to know their sectors in depth. One of the mechanized troop commanders, for example, “…never left the city. He lived there. He walked the streets every day. He stopped by every house and shop.”\textsuperscript{186}

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\begin{footnotesize}
\textsuperscript{181} Ibid.
\textsuperscript{182} McCone, Scott, and Mastroianni 2008, 13.
\textsuperscript{183} Yingling 2006.
\textsuperscript{184} Herrera 2006, 146; Vote figures from McMaster 2006 and Dayhoff 2008.
\textsuperscript{185} McMaster 2006.
\textsuperscript{186} Yingling 2006.
\end{footnotesize}
\end{flushright}
Interestingly, the push for persistent presence amongst and interaction with the population did not lead the 3rd ACR to completely abandon mounted operations. Both mounted and dismounted patrols were conducted, and troopers all the way up to the squadron commander would often patrol in tracked vehicles, dismounting to talk with civilians.\(^{187}\) Evidence indicates that the townspeople were not intimidated by the 3rd ACR’s heavy vehicles: one NCO remarked that it became very difficult to maneuver the heavy Bradley vehicles through the streets, “because you had the kids out…trying to greet us and you had other [civilian] vehicles trying to pass us.”\(^{188}\) Another patrol of two Bradleys and two tanks had a maintenance issue, forcing it to halt. Soon, locals came out and “just swarm[ed] us…they start[ed] bringing out tools, pulling tools out of the track and fixing it for us...we were pretty wired on tea by the end of the night.”\(^{189}\)

While mechanization may become a symbol of incumbent intimidation as a result of heavy-handed operations, it can also become a positive point of identification amongst the population.\(^{190}\)

As mentioned previously, the 3rd ACR gained control of a light infantry battalion from the 82nd Airborne Division, the 2-325th, for about four months out of the nine-month deployment. Accounts vary as to when the unit actually arrived, but it appears that the unit arrived during or immediately after the last phases of ORR, in September of 2005, and left early in January 2006 (at which point a combat engineer company took over much of the 2-325th’s area of

\(^{187}\) McConne, Scott, and Mastroianni 2008; Galloway 2006.

\(^{188}\) Ibid.

\(^{189}\) Ibid.

\(^{190}\) An author interview with one Stryker infantry platoon sergeant who conducted operations in Nineveh province from August 2005 to December 2006 helps confirm this notion. While the population in his area of operations was at first wary of the Stryker vehicles, because of the heavy-handedness of the previous unit, they soon came to view the Stryker vehicles as friendly. Children would often swarm to the vehicles to get candy and play with troops. Though Iraqis were occasionally angered by a vehicle running over a car or destroying a wall, the response to the Strykers was generally positive.
operations).\textsuperscript{191} The six hundred soldiers of the 2-325\textsuperscript{th} were based in Sarai, an ancient neighborhood measuring about one-quarter by one-half of a mile, which was nearly impassable to armored vehicles due to its narrow alleyways, and was also known to be an insurgent stronghold.\textsuperscript{192} The 2-325\textsuperscript{th} performed excellently by all accounts, operating alongside an Iraqi Army brigade to establish security and build a positive intelligence environment.\textsuperscript{193} Importantly, though the 2-325\textsuperscript{th} is by organization the lightest type of battalion in the Army, it often conducted mounted patrols just like its more heavily mechanized 3\textsuperscript{rd} ACR peers. The battalion commander is worth quoting at length:

> By employing a combination of all three basic methods of patrolling (mounted, dismounted, and mixed) we were able to saturate the zone and deny the enemy freedom of movement; stay in close contact with locals; and provide for mobile and lethal reaction forces capable of reinforcing our dismounted patrols in minutes, when necessary. This provided both a real capability and a deterrent to enemy attacks. In essence, we were able to enjoy the strengths of dismounted and mounted patrols while minimizing the potential hazards or drawbacks of any single employment method.\textsuperscript{194}

The use of the 2-325\textsuperscript{th} in Tal Afar brings up an important point: just like in conventional warfare, when combatants face very difficult terrain, light infantry may prove indispensable.

> The 3\textsuperscript{rd} ACR also attempted to reduce damage to the town’s population and social fabric as much as possible. As one officer in the unit noted, after capturing much of the insurgency’s leadership,

> The rest of the direct action [insurgents] kind of faded into the woodwork and we really didn’t pursue them that hard. We understood that they were involved in attacks against Iraqi and coalition forces primarily for either ideology or money; and our goal was to win them over…we didn’t have an interest in pursuing each individual triggerman.\textsuperscript{195}

\textsuperscript{191} Yingling 2006 indicates that the unit arrived immediately after the clearing, while Gibson 2006 indicates that it participated in the operations. See Herrera 2006, 146, for the engineer company’s replacement of the 2-325\textsuperscript{th}.

\textsuperscript{192} Gibson 2006; Herrera 2006, 126-127; Yingling 2006.

\textsuperscript{193} Yingling 2006.

\textsuperscript{194} Gibson 2006.

\textsuperscript{195} Herrera 2006, 135.
Before each raid, commanders would assess how a raid on a particular house would be perceived by the rest of a street, and a formal claims system was set up to repay civilians for damage caused during U.S. or Iraqi operations.\textsuperscript{196} Additionally, the detainee system was designed to address one of the main Sunni grievances: that coalition forces were cooperating with the Shi’a and wrongfully detaining Sunnis. When detainees were brought in, sheiks were allowed to argue for their release after seeing evidence.\textsuperscript{197} Innocents were released as quickly as possible, and were returned to their homes with money and new clothes.\textsuperscript{198} Additionally, great pains were taken to ensure that detainees were well cared for and given medical assistance, and McMaster admonished his soldiers that “Every time you treat an Iraqi disrespectfully, you are working for the enemy”—the 3\textsuperscript{rd} ACR went so far as to take a poll of detainees to see how they were being treated.\textsuperscript{199} Efforts to treat detainees well were coupled with a strong information campaign, which emphasized that the main enemy of the population in Tall Afar was not other religious groups but instead the extremists.\textsuperscript{200}

The U.S. operations in Tall Afar were also designed to integrate and train the Iraqi police and army. As such, Iraqis lived alongside American units on patrol bases, assisting in and later conducting operations.\textsuperscript{201} Co-location of American and Iraqi units paid significant dividends, as the forces learned to respect each other and training was almost constant.\textsuperscript{202} Despite significant deficiencies in the Iraqi Army’s supply system and salary system, Iraqi units began showing signs of competence by taking the lead in small operations, and often proved more adept than

\textsuperscript{196} Packer 2004; \textit{Counterinsurgency Field Manual}, 184.
\textsuperscript{197} Yingling 2006.
\textsuperscript{198} Ibid.
\textsuperscript{199} Mccone, Scott, and Mastroianni 2008; Ricks 2006, “The Lessons of Counterinsurgency.”
\textsuperscript{200} Herrera 2006, 135.
\textsuperscript{201} Packer 2004.
\textsuperscript{202} Brookshire 2010.
American units in gathering intelligence because of their knowledge of the local language and culture.\textsuperscript{203} During an October 15, 2005 referendum vote, Iraqi forces contained insurgent attacks on several polling stations before U.S. Army soldiers could arrive, and by December Iraqi companies and platoons were executing searches and raids with more autonomy.\textsuperscript{204} The police force remained somewhat problematic. While the force was able to recruit a significant Sunni contingent, and canvassed neighborhoods to determine the status of food and water supplies, the police still remained a faction in the city’s conflicts and sometimes used heavy-handed tactics as part of their work.\textsuperscript{205}

Conclusions

The 3\textsuperscript{rd} ACR’s operations in Tall Afar were roundly hailed as a success. President Bush devoted a speech to the campaign, saying that “Tall Afar is today a free city that gives reason for hope for a free Iraq,” while the mayor of Tall Afar wrote a public letter to Bush and other U.S. officials asking that the 3\textsuperscript{rd} ACR’s deployment be extended.\textsuperscript{206} An internal review conducted by U.S. military experts of three dozen major US brigades, battalions, and similar units operating in Iraq during 2005 privately concluded that the 3\textsuperscript{rd} ACR had proven the best.\textsuperscript{207} The dramatic drop in monthly attacks, from about 145 a month at the start of the 3\textsuperscript{rd} ACR’s operations to about 37 a month in January 2006, provides tangible evidence of the 3\textsuperscript{rd} ACR’s successes.\textsuperscript{208} While sectarian violence in the city has flared up since the 3\textsuperscript{rd} ACR left, especially as troops were

\begin{thebibliography}{99}
\bibitem{Packer2004} Packer 2004.
\bibitem{Herrera2006} Herrera 2006, 146.
\bibitem{Brookshire2010} Brookshire 2010; McMaster 2006; Packer 2004; Tyson 2006.
\bibitem{McConeScott} McCone, Scott, and Mastroianni 2008.
\bibitem{Ricks2006} Ricks 2006, “The Lessons of Counterinsurgency.”
\bibitem{McMaster2006} McMaster 2006.
\end{thebibliography}
moved from across Iraq into the Baghdad area, and the outcome of the insurgency in Tall Afar remains uncertain, it is clear that the 3rd ACR set the conditions for future success.209

The successful outcomes seen by the 3rd ACR in Tall Afar call into serious question Lyall and Wilson’s causal claim that heavily mechanized forces perform poorly in counterinsurgency campaigns. Switching from conventional operations to counterinsurgency may prove painful and difficult for most mechanized units, as it did for the 3rd ACR, but the change is by no means impossible. When mechanized units do make a concerted effort to move from conventional to COIN force employment strategies, and employ proper counterinsurgency practices while in theater, they can create positive outcomes. The case to follow, of the 82nd Airborne in Fallujah, is meant to illustrate the contrapositive: that light infantry forces using poor force employment can be a cause of counterinsurgency failure.

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V. The 82\textsuperscript{nd} Airborne Division in Fallujah

The 4,400 soldiers of the 3\textsuperscript{rd} Brigade, 82\textsuperscript{nd} Airborne Division arrived in the Fallujah area during September of 2003, already veterans of a combat tour in Afghanistan.\textsuperscript{210} Over their tenure, they would see the insurgency coalesce from a disorganized grassroots movement into a coordinated resistance termed the “epicenter” of the insurgency.\textsuperscript{211} Much of the insurgency’s rise can be explained by the 82\textsuperscript{nd}’s enemy-centric, hands-off approach that led to a deep rift between the townspeople and occupying forces, creating the very “information starvation” that Lyall and Wilson ascribe to heavily mechanized forces. In the following three subsections, I first discuss background on the insurgency in Fallujah, before going into the 82\textsuperscript{nd}’s pre-deployment period and analyzing the unit’s actual operations. Because information is most plentiful for the battalion that actually operated in Fallujah (the 1\textsuperscript{st} Battalion, 505\textsuperscript{th} Parachute Infantry Regiment), much of the analysis focuses there.

The Fallujah Insurgency

Fallujah has long had a reputation as a city outside the reach of government control. In 1920, the leader of a British contingent sent to quell an uprising was killed there, setting off an invasion that caused the deaths of 10,000 Iraqis and 1,000 British soldiers. Even Saddam Hussein had trouble dealing with Fallujah, choosing to garner the city’s loyalty by passively

accepting its role in smuggling and by distributing money and jobs through local tribal leaders.\textsuperscript{212} Without many natural resources, Fallujah’s income in large part derives from its key position astride trade routes from Syria and Jordan: besides acting as a way station for trucking, Fallujah has historically been a crime capital, known for its role in robbing merchants, trading in smuggled goods, and selling stolen car parts. Some industry also once operated in the city, much of which had fallen into disrepair by the time U.S. forces arrived.\textsuperscript{213}

With the onset of the U.S. occupation, the criminal activity in Fallujah lost governmental approval, leaving many people without work. The dissolution of the Ba’ath party and the armed forces also contributed to joblessness, especially of people with military experience, as many in Fallujah had been members of the Iraqi Army’s Republican Guard or enforcers for Saddam Hussein’s government. By the time the 82\textsuperscript{nd} arrived in September of 2003, anywhere from 70,000 to 140,000 Fallujah residents were unemployed, of whom U.S. forces estimated half were at least occasionally paid to cooperate with the insurgency.\textsuperscript{214}

Fallujah, known as the “City of Mosques,” also had a tradition of religious fundamentalism that contributed to animosity against U.S. forces. The 1990s had seen a rise in Salafist tendencies in Fallujah, as many Muslims would study in Baghdad and return to Fallujah with radical beliefs, making the town a repository for extremist traditions. These tendencies caused problems even under Saddam’s rule, as militants bombed music stores and the city cinema.\textsuperscript{215} As the U.S. arrived, radical clerics circulated in the area, preaching in favor of the forcible expulsion of US forces from Iraq, and foreign fighters began to use Fallujah as a base.

\textsuperscript{212} Ballard 2006, 2-3; Foulk 2007, 3.
\textsuperscript{213} Ballard 2006, 2-3; \textit{Occupation Dreamland}, directed by Ian Olds and Garrett Scott (Fallujah, Iraq: GreenHouse Pictures and Subdivision Productions, 2005); West 2005, 13-18.
\textsuperscript{215} Salafism is a form of fundamentalist Islam sometimes associated with violence. See Hashim 2006, 23-25; West 2005, 14.
As in Tall Afar, clerics drummed up opposition to the occupation by warning that Fallujah would be handed over to a Shi’a government. To many residents who had fought against the Shi’a Iranians years before, this threat seemed especially poignant.\(^{216}\)

Before the 3\(^{rd}\) Brigade’s arrival, Fallujah had seen instances of heavy handedness that predisposed them against the U.S. and the 82\(^{nd}\) Airborne Division in particular. During the 1991 Gulf War, a bomb meant to hit a bridge instead struck a crowded Fallujah marketplace, killing over one hundred civilians. On April 28\(^{th}\), 2003, a unit of the 82\(^{nd}\) operating in Fallujah fired into a crowd of demonstrators, claiming self-defense, and killed fifteen. On April 30\(^{th}\), members of the 82\(^{nd}\) again killed civilians under the pretense of hostile fire, and later investigation found over 100 bullet holes in seven different buildings that faced the soldiers’ position, indicating indiscriminate firing. The population also complained that soldiers of the 82\(^{nd}\) had been disrespectful, sometimes urinating in the streets and hassling civilians at checkpoints.\(^{217}\)

All of these factors made Fallujah fertile ground for the insurgency. As in Tall Afar, the town had a tribal system that often obligated tribes to retaliate against coalition forces for casualties inflicted on the population.\(^{218}\) After the initial occupation by soldiers of the 82\(^{nd}\), several units were to have responsibility for Fallujah—first the 3\(^{rd}\) ACR (on its first deployment), then the heavily mechanized 3\(^{rd}\) Infantry Division, then the 3\(^{rd}\) ACR again, and finally the 3\(^{rd}\) Brigade of the 82\(^{nd}\) in September of 2003. When the 3\(^{rd}\) Brigade arrived, it faced a disorganized insurgency comprised of ex-Ba’athists, criminals (many of whom had been released from jail by Saddam just before his fall), foreign fighters, and unemployed youth.\(^{219}\) While the insurgency

\(^{218}\) West 2005, 17.
conducted attacks on U.S. forces, they avoided larger firefights in favor of improvised explosive devices (IEDs), mortars, occasional sniping, and hit-and-run rocket-propelled grenade (RPG) firings. Much of the violence was directed against supply convoys rather than combat troops, as insurgents sought to avoid heavy casualties.\textsuperscript{220}

The 82\textsuperscript{nd} Airborne Division in the Lead-Up to Deployment

The 3\textsuperscript{rd} Brigade, 82\textsuperscript{nd} Airborne Division (3/82) occupied Fallujah and its surrounding towns from September 2003 through March 2004: the 1\textsuperscript{st} Battalion, 505\textsuperscript{th} Parachute Infantry Regiment (1-505\textsuperscript{th}) was given responsibility for Fallujah proper, while the 3-505\textsuperscript{th} took over the Habbaniyah region to the west and the 1-504\textsuperscript{th} took over the sparsely populated area to the east of Fallujah out to the town of Abu Ghraib.\textsuperscript{221} As discussed in the previous section, each battalion was reinforced by a mechanized company team comprised largely of Bradley fighting vehicles to beef up the fleets of lightly armored HMMWV’s.

The 82\textsuperscript{nd} Airborne, in stark contrast to the 3\textsuperscript{rd} ACR, is perhaps the lightest unit by doctrine in the U.S. Army.\textsuperscript{222} Designed to conduct airborne operations, the 82\textsuperscript{nd} is capable of deploying by parachuting out of planes into enemy-held territory, using only vehicles dropped by parachute and able to operate without supply for multiple days. The 82\textsuperscript{nd} has a long history of such airborne operations, dating back to World War Two, though the most recent major use of the Division’s airborne capability was in the 1989 invasion of Panama. Until the wars in Iraq and Afghanistan, the 82\textsuperscript{nd} kept one of its nine battalions on constant alert, allowing it to rapidly

\textsuperscript{220} West 2005, 17-18; Foulk 2007, 7-8.
\textsuperscript{221} Wallace 2010.
\textsuperscript{222} The Army also has additional airborne brigades in the 173\textsuperscript{rd} Airborne Brigade Combat Team and the 4\textsuperscript{th} Brigade, 25\textsuperscript{th} Infantry Division.
mobilize for operations across the globe.\textsuperscript{223} It is unsuited for fighting against armored forces because of its dearth of heavy equipment, and did not engage Saddam Hussein’s armored forces during the 1991 Gulf War, instead waiting for the arrival of mechanized forces.\textsuperscript{224} The 82\textsuperscript{nd} is widely known for its status as one of the best light infantry units in the U.S. Army.

Before its deployment to Iraq, the 3/82 was in Afghanistan from June 2002 until April 2003, where it conducted classic light infantry missions. One battalion, for example, was sent to patrol the mountainous border for two months, where it sent out infantry patrols and operated in relative isolation. The unit also conducted some helicopter operations to capture suspected weapons caches, but with few translators and a largely conventional focus, little was done in the way of counterinsurgency work.\textsuperscript{225} When the 3/82 returned to the states, the brigade was soon notified that it was to be deployed again in July of 2003. While information is limited on the 3/82’s pre-deployment program, two primary themes are clear. First, the 3/82 attempted to transform into a motorized infantry unit, maximizing its numbers of HMMWVs and other wheeled vehicles. In the words of the 1-505\textsuperscript{th}’s chaplain, “it was literally beg, borrow, and steal from a bunch of different units on the post to come up with enough trucks to outfit the battalion,” and by deployment the battalion reportedly had one vehicle for every eight or nine soldiers, many of which were fitted with improvised armor.\textsuperscript{226} Additionally, though the Brigade received

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\textsuperscript{223} See Wallace 2010; Also see globalsecurity.org’s page on the 82\textsuperscript{nd} Airborne Division, available at http://www.globalsecurity.org/military/agency/army/82abn.htm (Accessed January 24, 2011).
\textsuperscript{225} Wallace 2010.
\textsuperscript{226} Chaplain Merrell D. Knight, 2007. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 8 June, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
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some cultural and language training, the focus was primarily on conventional dismounted and mounted infantry operations.  

**Operations in Fallujah**

Arriving in the Fallujah area in September of 2003, the 3/82’s commander gave his subordinate battalion commanders five key tasks that were to shape the deployment: the battalions were to fight and defeat the insurgents, reestablish local governance councils, defuse Sunni hostility, aid the Iraqi police, and help invigorate the local economy.  

While the strategy gave focus to reconstruction efforts, the emphasis was on turning over control of governance and security to Iraqis so as to avoid alienating a Sunni population already averse to U.S. forces. To minimize discontent, the 3/82 approach was hands-off, and eschewed contact with the locals to avoid heightening resentment towards occupying forces. Moreover, the means used to combat the insurgency were largely enemy-centric, focusing on raiding and searching for suspected insurgent hideouts. As the 3/82 continued to reduce operations in Fallujah across the duration of the deployment, insurgent capabilities grew stronger and stronger, eventually leading the Marines who replaced the 3/82 to assault the city in the face of stiff resistance.

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227 Knight 2007; Major Jason Curl, 2007, Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 19 April, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].

228 West 2005, 26.
The 1-505th’s Patrolling Patterns

At the forefront of the 1-505th’s implementation of the 3/82’s strategy was a policy that reduced the battalion’s presence in the city. Rather than establishing bases within the city, most of the 1-505th lived in a former Ba’athist resort named Forward Operating Base Volturno, two miles to the east of Fallujah, with one company stationed in a rural base about 15 miles to the south.\textsuperscript{229} Rather then conduct patrols within the city, the 1-505th would “[patrol] the outer highways and [drive] through the town in shows of force” during the day, conducting raids and guarding the roads from IEDs at night.\textsuperscript{230} The 1-505th would routinely venture into the city to give out humanitarian assistance like food and clothing, to talk with local leaders like sheiks and clerics, and to work with town administrators, but each of these patrols were planned with what appeared to be a conventional schema—each time the 1-505th went into the town, it would meet with a “target,” and, upon completion of the mission, would head back out to base.\textsuperscript{231} Especially when conducted on foot, the walk alone from base to Fallujah could take 1.5 hours, reducing the time that the unit on patrol could actually be inside the city.\textsuperscript{232} Without maintaining a persistent presence in the city, the insurgency had the space it needed to grow and organize without significant pressure from U.S. forces, and began to coerce the population into submission, denying the U.S. the popular support so key to COIN success. As one Fallujah resident said, “If we cooperate with the mujahedeen, we get raided. If we cooperate with the Americans, we get killed.”\textsuperscript{233}

\textsuperscript{229} Knight, 2007.
\textsuperscript{230} West 2005, 27-34.
\textsuperscript{231} “Target” is my nomenclature. West 2005 chapters 3 and 5; Knight, 2007.
\textsuperscript{232} Wallace 2010.
\textsuperscript{233} West 2005, 42.
While the patrolling strategy certainly lowered casualties, as Paul Bremer, the head of the Coalition Provisional Authority (CPA) would later write, it also “gave the impression that we’d ceded towns like Fallujah to the enemy.” As time wore on, and the insurgency metastasized, patrols began to need more and more firepower for force protection, and, “as December drew to a close, the minimum force [the 1-505th] would send into Fallujah was a platoon mounted in six vehicles.” Where in Tall Afar, better persistent security allowed U.S. forces to patrol in smaller units, thus gaining improved patrol coverage, worsening security in Fallujah forced the battalion to send out larger units, meaning that fewer patrols into the city could be conducted.

Additionally, for each patrol that went into the city, “you had to fight your way in every day and you had to fight your way out. There were no uncontested roots.” Coupled with the unwillingness of the 3/82’s leadership to limit American soldiers’ freedom to return fire, collateral damage and the resentment it created became a significant source of recruitment for the insurgency. In response to insurgent attacks, U.S. soldiers would resort to suppressive fire, shooting at areas rather than individual targets; when IEDs went off, Americans would often indiscriminately fire on bystanders. Insurgents soon learned that American forces would bring considerable firepower to bear when attacked, and began to spring attacks in densely populated areas. A lack of cultural awareness would also prove deadly, as on the fifth day after the 82nd’s arrival in Fallujah, a patrol opened fire on Iraqis at wedding after reportedly mistaking celebratory gunfire for an attack.

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235 West 2005, 35.
238 Ballard 2006, 5.
The patrolling patterns also did little to create interaction with the population. Many patrols would go into the city mounted on vehicles, not stopping until they reached their intended target, while foot patrols were focused on force protection rather than talking to locals. Few relationships were created with townspeople, reinforcing the 82nd’s position as a foreign and menacing occupation force. The lack of interaction created “information starvation”—Iraqis did not provide much in the way of intelligence, and U.S. forces had a great deal of trouble understanding the complex local power structure, which created problems for figuring out which among the numerous sheiks and clerics held real sway. In this environment, it became very difficult for the 1-505th’s commander to target reconstruction projects or to understand which local leaders were supporting the insurgency.239

In early February, an Iraqi Civil Defense Corps (ICDC) battalion arrived to Fallujah, and the 1-505th began to turn over security to ill-prepared Iraqi forces. By March, security patrols within the city were reportedly limited to 45 minutes, and

There was a de facto standoff in Fallujah: the 82nd ringed the city but effectively ceded control of its streets to the townsfolk. Insurgents continued to use the urban sanctuary to ambush American troops, plant IEDs, and stockpile weapons...By now, the 82nd—due to rotate home—was conducting a few spot patrols in the city.240

When the Marines came to take over security, they found a town that was under insurgent control. Fallujah had become a staging area for insurgents to launch attacks across Iraq, and the insurgency had morphed from an “unorganized grassroots resistance” into an organization capable of launching complex attacks on U.S. and local forces alike.241

239 West 2005, chapters 3, 4, 5; “Marines Take Over Fallujah”; Lieutenant Colonel John Reynolds, 2006. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 14 March, Fort Leavenworth, Kansas [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS].
241 On February 12, 2004, insurgents attacked the commander of the 82nd and the commander of U.S. Central Command in a daylight ambush, indicating the strength of the insurgency. When the Marines invaded the city, insurgents used advanced tactics, covering their infantry advances with mortar fire. See also Foulk, 19-28; Shadid, 381.
Kinetic Operations: An Enemy-Centric Focus

Instead of focusing on winning over the population, the 3/82 attempted to stop the insurgency through direct action, believing that by destroying nodes in the insurgent network, the organization would cease to function. As the commander of the 1-505th would say, “The enemy [in Fallujah] is like a cancer…When you have someone who had cancer, you go and carve out the heart of it.”

Raids and cordon and search operations became the norm, often executed with harsh tactics:

At night [the soldiers] conducted raids. It was their favorite tactic: they would drive with night vision goggles, roar down a street in the pitch black with the lights out, scale a courtyard wall, then rush through the front door and up the steps into the sleeping quarters.

Night raids, though terrifying for the population, were favored because they avoided the violence that often accompanied daytime operations. Heavy-handedness prevailed, as doors were often knocked in and bags sometimes put over the heads of detainees.

Though some raids were conducted with precision on good intelligence, resulting the seizures of weapons and the capture of important insurgent leaders, the 1-505th’s enemy-centric focus did little to stem the rise of the insurgency.

This type of raiding approach had deleterious effects on Iraqi perceptions of U.S. forces. As one Iraqi policeman said, “That’s why Fallujah is boiling…American soldiers conducted humiliating house searches, breaking furniture, frisking men and women and stealing cash and jewelry.”

Iraqi culture places a premium on family honor—when heads of households were

242 West 2005, 43.
243 Ibid.
244 Ibid., 43; also Occupation Dreamland.
245 See for example West 2005, 40-41.
246 Foulk 2007, 17.
detained in front of their families, and women and children were taken into custody (sometimes simply because they were relatives of insurgents), Iraqi males often felt bound by tribal code to retaliate. Fallujah’s sheiks also felt that they were not receiving the respect they deserved, as Americans would often not consult them before launching raids.\(^{247}\)

The 3/82 would often step up kinetic operations after major insurgent actions, escalating violence at the expense of the population. When a large Army helicopter was shot down, killing 15 soldiers, the 82\(^{nd}\)'s commander approved Operation Iron Hammer, a series of sweeps designed to capture insurgent leaders and to find weapons caches. During the operations, aircraft dropped 1,000-pound bombs on ambush sites and houses suspected to have arms caches, and many local men were rumored to be killed, wounded, or detained. In response to later rocket attacks on U.S. forces, the 1-505\(^{th}\)'s commander rapidly ordered a broad two-company sweep of Fallujah’s eastern outskirts, only to be repulsed by insurgents.\(^{248}\) Even as city leaders protested the violent tactics, the 82\(^{nd}\)'s commander proclaimed that the division would “use a sledgehammer to crush a walnut,” and bring the 82\(^{nd}\)'s overwhelming firepower to bear.\(^{249}\) As the CPA representative to Anbar Province would later proclaim, the 82\(^{nd}\)'s “answer to everything is more firepower.”\(^{250}\)

In stark contrast to the 3\(^{rd}\) ACR’s operations in Tall Afar, the 3/82 was the subject of significant allegations of detainee abuse. Beatings of detainees reportedly came daily, and were often not used to gain intelligence but were instead attempts by the 82\(^{nd}\)'s soldiers to “blow off steam.” At one outpost near Fallujah, “Beating prisoners until they passed out or collapsed

quickly became the routine,” and the 3/82’s detainees reportedly suffered broken bones at the rate of one every two weeks.\(^{251}\) It is probable that such tactics fed the insurgency, as detainees may have felt compelled to become fighters after their experiences.

\section*{Development of Iraqi Security Forces}

If the 3/82’s strategy of turning Fallujah over to Iraqi control were to work, it would require strong indigenous Iraqi forces to fight the insurgency. Throughout the 1-505\(^{th}\)’s tenure, however, relations with Iraqi forces were poor at best, minimal efforts were made to train and equip the Iraqis appropriately, and support from U.S. forces was lacking.

One incident especially set an early tone for U.S.-Iraqi police relations. On the night of September 11, 2003, Fallujah police were chasing a car from which shots had been fired on the mayor’s office. Speeding down the highway, the police sped towards an American checkpoint—scared that the advancing vehicles were insurgents, the Americans opened fire with heavy machine guns and grenade launchers, killing several police and some of the guards of a nearby hospital. The 1-505\(^{th}\)’s commander, after expressing regret, asked the police why they had not simply called the Americans via radio. The irate police responded that, despite American promises, radios had never been distributed.\(^{252}\)

Insufficient equipment and training was to become a theme for the Fallujah police force. Though the commander of the 82\(^{nd}\) would request more equipment month after month, by January 2004 the Division had only received 92 of 318 requested police vehicles and 274 of

\(^{251}\) Ricks 2006, \textit{Fiasco}, 278-279.

\(^{252}\) Foulk 2007, 12; West 2005, 27-28.
1445 radios. The training program for the police force was also inadequate, comprising a scant three weeks of schooling before sending trainees back into the force. The results were decidedly negative: in early 2004, the 82nd was to rate all of the 49 police stations in its area of operations ineffective.

As the security situation within Fallujah worsened over time, the police refused entirely to work with U.S. soldiers, worried that cooperation would lead to insurgent reprisals. Without assistance from the 1-505th, however, the police force was outgunned by insurgents, and became operationally ineffective, refusing to patrol insurgent-dominated areas of town like the Jolan district.

Upon the arrival of two poorly trained and equipped ICDC battalions to Fallujah in early February, the police requested that American forces completely step back from the city. Without an American presence, there existed no credible deterrent to insurgent attacks, and on February 14, the police station and one of the two ICDC stations were assaulted by dozens of insurgents. The 1-505th opted to let the second ICDC battalion respond to the crisis, and by the time the Iraqis arrived the insurgent attack was over. 23 policemen were killed, and 75 prisoners were freed. The mayor, complicit in the attack, was arrested, the police chief was fired after refusing to don his uniform the next day, and the commander of the ICDC battalion within Fallujah stepped down. Though the sheiks were outraged over the attacks, they failed to retaliate against the perpetrators. In essence, the town had been completely overtaken by insurgent forces.

Reconstruction Programs

Reconstruction efforts in Fallujah were uneven at best. Though water was reportedly restored to 80% of the city by February, and electricity had increased since the end of the U.S. invasion, only 16,000 jobs had been created by the U.S. across all of Anbar. Anecdotal evidence suggests that significant resources were put towards force protection rather than projects for the population, and the town was too dangerous for American engineers to venture forth and help restore services. Reconstruction money came in at a trickle of $200,000 a month, though the costs of restoring Fallujah’s sewer and water purifying system alone were estimated at $20 million. Only 10 civil affairs personnel were authorized for Fallujah, and, though multiple requests for specific project funding were sent to headquarters in Baghdad, they were rarely endorsed. The town’s industrial base, capable of employing tens of thousands, lay dormant, and businesses did not function: “Aside from farming, kidnapping, and truck driving, the sources of income in the city were nil.”

What money was spent in the city was often spent through the more powerful sheiks, who vied for lucrative coalition contracts, thus cutting out other city leaders who played a role in the insurgency. Especially inside of Fallujah proper, where the clerics held sway, reconstruction dollars were ineffective in pulling residents away from the insurgency. Much of this might be attributable to the 1-505th’s lack of a comprehensive understanding of the city’s power structure, as they overestimated the power of the sheiks to control the insurgency.

258 Trolla, 2006; West 2005, 33.
259 West 2005, 43-44; Foulk 2007, 18.
261 See for example West 2005, 33.
Conclusions

Soon after the 3/82 turned control of Fallujah over to the Marines, four security contractors were killed and mutilated in the center of the city. The Marines were ordered to invade the city in April of 2004, where an estimated 2,000 insurgents and foreign fighters, joined by members of the ICDC, opposed them. The assault was unsuccessful for political reasons, and a second attack, in November of 2004, resulted in widespread destruction.

There are many reasons for the 3/82’s relative COIN failure, some of which stem from poor strategic choices at higher levels. Not enough money was dedicated to reconstruction, and resources to train Iraqi police and Army units were very limited. However, much of the failure can directly be attributed to the 3/82’s force employment: by failing to embed with Iraqi forces, using heavy handed tactics, and not providing persistent presence amongst the population, the 3/82 created an environment in which the insurgency could flourish. Despite their status as an elite light infantry unit, the soldiers of the 82nd created a great distance between themselves and the local population, suffering from “information starvation” and proving unable to stem the rise of the insurgency through their kinetic strategy.

Additionally, the 82nd Airborne on the whole, by their force positioning throughout Anbar province, showed a clear misunderstanding of the insurgency’s center of gravity, emphasizing the control of terrain rather than population centers. Though Fallujah proper comprised up to one-third of Anbar’s population, and was the epicenter of the insurgency, it only garnered one out of the 82nd’s nine battalions; Tall Afar, by contrast, comprised about 15% of Nineveh’s population, but at the height of operations received sustained presence from about 30% of
Nineveh’s battalions. Though the 3rd ACR would receive many more Iraqi soldiers for operations in Tall Afar than the 3/82 would in Fallujah, the 3rd ACR took great pains to train them, helping to ensure that Iraqi forces could continue to control the city when U.S. forces left. The ICDC battalions in Fallujah, by contrast, quickly melted away after first contact with the enemy during the April Marine invasion.

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262 Population figures from UN Inter-Agency Information and Analysis Unit at http://www.iauiraq.org, 2007 estimates. Only the 1-505th operated in Fallujah proper, while Tall Afar had the 1st and 2nd Squadrons operating there, with the 1st Squadron replaced by the 2-325th after clearing operations had been completed.

VI. Conclusion

The previous three sections have presented strong empirical evidence that force employment, not mechanization, is a key driver of counterinsurgency outcomes. Large-n data provide little support for the mechanization hypothesis, while a paired comparison of two units in Iraq demonstrates that, regardless of mechanization, units that use good COIN force employment will see positive outcomes, and those that employ their forces poorly will see negative outcomes. Mechanized armies may find adapting to COIN a painful process, as soldiers used to conducting violent assaults with armored vehicles must learn to perform dismounted patrolling, to restrain their use of force, to operate with poorly armed indigenous forces, and to interact with and win over locals. The 3rd Armored Cavalry Regiment’s experience in Tall Afar shows us that such a transformation, though difficult, can prove highly successful. Infantry may find it easier to change over from conventional to counterinsurgency operations, as they are trained as dismounts, yet they, like mechanized fighters, can practice poor force employment. When infantry cause collateral damage and fail to provide persistent security, they can suffer from the very same “information starvation” that Lyall and Wilson attribute to mechanized forces, causing negative COIN outcomes. Though not investigated in this study, I privilege an “adaptation hypothesis” to explain why mechanized armies have historically performed poorly in COIN campaigns: heavily mechanized armies are less capable of shifting away from their conventional focus than armies with fewer vehicles.

The debate over mechanization and COIN outcomes has very important implications for policy. If Lyall and Wilson’s hypothesis is correct, and heavily mechanized forces will generally perform poorly in the counterinsurgency environment, then policy makers must either avoid
COIN campaigns or must restructure their armies. If my hypothesis is correct, however, doctrinally flexible militaries that can rapidly retrain their soldiers to fight in counterinsurgency wars may be able to get by with mechanized force structures, allowing for multiple foreign policy options. Whether militaries can switch away from counterinsurgency campaigns back to conventional warfare is a separate but highly relevant question.
Bibliography

Section II: Theory


Section III: Statistical Analysis


Gano Jr., First Sergeant Richard. 2006. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 26 January. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]
Kendrick, Lieutenant Colonel Scott. 2005. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 13 December. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]

Nagl, Lieutenant Colonel John A. 2007. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 9 January. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]

Seigel, Lieutenant Colonel David. 2006. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 5 October. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]

Section IV: The 3rd ACR in Tall Afar


Davis, Major Michael. 2010. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 1 November. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]

Dayhoff, Major James. 2008. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 17 September. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]


Yingling, Lieutenant Colonel Paul. 2006. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 22 September. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]

Section V: The 82nd Airborne Division in Fallujah


Curl, Major Jason. 2007. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 19 April. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]


Knight, Chaplain Merrell D. 2007. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 8 June. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]


Reynolds, Lieutenant Colonel John. 2006. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 14 March. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]


Trolla, Captain Jon M. 2006. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 10 April. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]

Wallace, Major Steven. 2010. Interview by Operational Leadership Experiences Project team with Combat Studies Institute, digital recording, 6 October. Fort Leavenworth, Kansas. [Digital recording stored on CD-ROM at Combined Arms Research Library, Fort Leavenworth, KS.]