



Future Megacity Operations—Lessons from Sadr City

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The cities of the future, rather than being made of glass and steel ... are instead largely constructed out of crude brick, straw, recycled plastic, cement blocks and scrap wood. Instead of cities of light soaring toward heaven, much of the twenty-first century urban world squats in squalor, surrounded by pollution, excrement, and decay.

—Mike Davis, *Planet of Slums*

We are in the age of the slum. Studies of future cities and megacities bristle with statistics, growth trend lines, and comparative analogies, prophesizing: The future of the human race

is the city; the future of the city is the megacity, and the reality of the megacity is the slum.

A megacity is a metropolitan area with a total population in excess of 10 million. The recent growth



(Photo courtesy of NASA)

The image of the Earth at night vividly depicts the city lights of most of the world's major population centers. The image was created from a composite assembled from data acquired 18 April–23 October 2012 by the Suomi National Polar-orbiting Partnership satellite.

patterns of megacities worldwide is only outpaced by the growth of their slums, which account for the bulk of recent urban population growth.¹ An ominous report prepared by Swedish-based multinational corporation Ericsson, titled *Networked Society: the Next Age of Megacities*, forecasts recurring growth patterns among megacities: high growth due to migration and birth rates, large informal settlements and young populations, basic infrastructure and public service needs, corruption and lack of transparency, and a lack of empowerment for poor populations.²

By 2040, several megacities are projected to have more inhabitants than Australia's current national population of over 23.7 million.³ By 2050, 70 percent of the world's population will live in cities, with as much as 85 to 90 percent of urban population growth occurring in slums.⁴ This is important to military planners because future conflict will occur—as it does today—where people live. In the future, they increasingly live in cities and megacities.

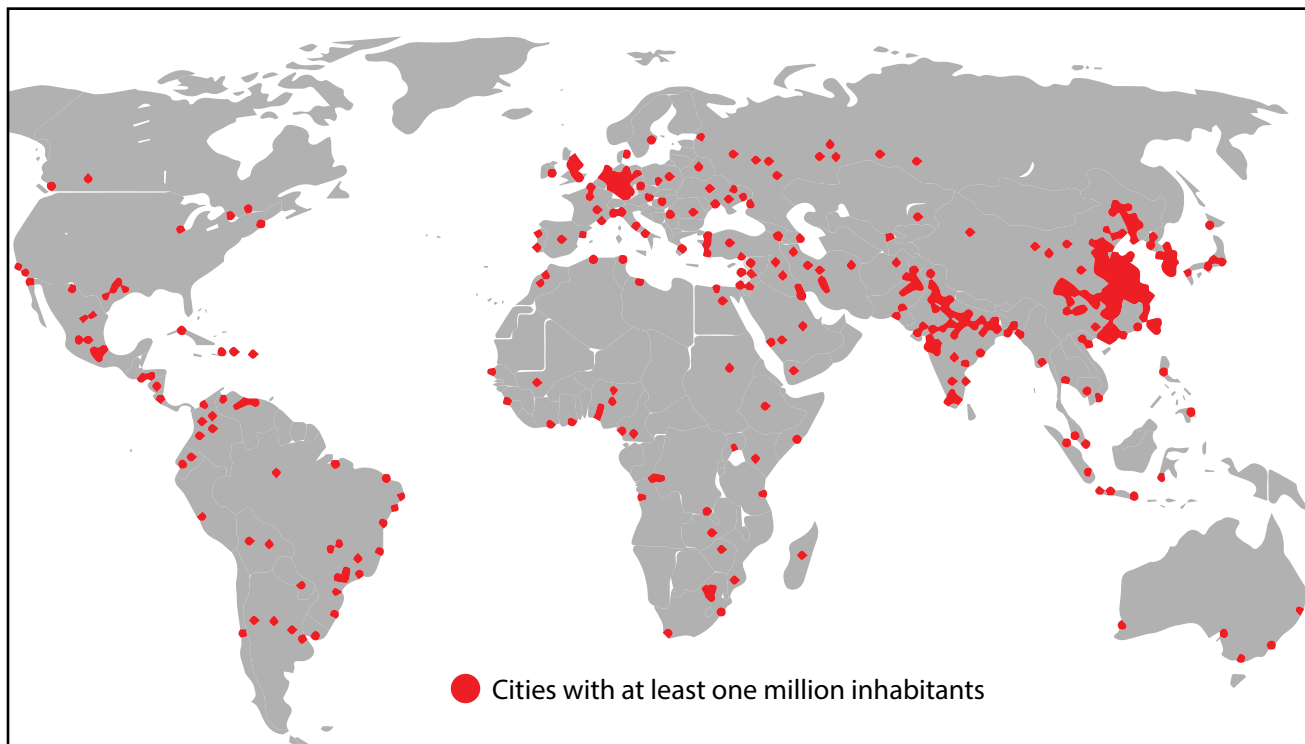
The U.S. military has never conducted combat operations in a true modern megacity, with the arguable

exceptions of security missions after 9-11 in New York City and during the Los Angeles riots in the 1990s. However, the military has confronted many of the same challenges of a megacity's scope and scale—its vast networks and connections; its population of densely packed, impoverished millions; and the twin ends of improving conditions while battling a determined enemy for control. This was the U.S. military experience in the Baghdad slum district of Sadr City.

Sadr City

Although not part of a true megacity, Sadr City replicates, on a smaller scale, many of the challenges associated with true megacities worldwide. The tribulations of successive U.S. Army battalions and brigades operating among Sadr City's 2.4 million people may offer a condensed case study of what awaits divisions and corps operating in future megacities of 20–30 million inhabitants.

One of the largest slums on earth, what is commonly called Sadr City, is the *al-Thawra* (“revolution”) District of Baghdad.⁵ With an estimated population of



(Image courtesy of Wikimedia Commons)

Megacities Around the World

2.4 million, Sadr City's 26 square kilometers has more inhabitants than Philadelphia or Dallas.⁶

The growing gap between barricaded elites and slums has fed the growth of what Richard Norton has called "feral cities."⁷ Governments typically abdicate control of huge slums, knowing that the security and services void will be filled by criminal gangs, ethnic or sectarian militias, or extremist groups. Urban slums worldwide are disproportionately populated by the ethnically or socially repressed—Shiites and Kurds, in Sadr City's case.⁸

In *Planet of Slums*, Mike Davis lays out life in Third World slums. It reads like a checklist of conditions in Sadr City: knee-deep lakes of raw sewage visible in satellite imagery, hills of rotting garbage, under-employed males hustling for informal income in a labor-glutted economy or losing themselves in escapist vices, and endemic infant mortality rates and birth defects. Potable water is rare to nonexistent, and communicable diseases such as typhus and dysentery coexist with rural pestilences like hookworms. Ideological and criminal networks flourish.

The southern third of the al-Thawra District consists of the relatively well-to-do Habbibiya and

Jamila neighborhoods. Home to a large Sunni Kurdish population, this area hosts the Jamila Market, one of Baghdad's largest. Jamila heaves with industry and commerce, its roads clogged with tractor trailers transporting goods from scores of factories, warehouses, and machine shops.

Leaving Jamila, the district gets progressively grittier and more destitute as it moves northeast into Sadr City proper. The central al-Thawra Street transits endless sectors of dense residential housing and burgeoning crowds of thousands of idle young men.

As megacities grow slums in their unclaimed peripheral land, Sadr City grows its own even more fetid slums. At al-Thawra Street's culmination on Sadr City's northeast edge, a wide canal of raw sewage delineates the sprawling shantytowns of Hay Tariq and Hay al Muntader, respectively dubbed "Squaretown" and "Triangletown" by U.S. troops. These squatter settlements, which grow at a viral rate, are home to the most impoverished, including many war refugees displaced by fighting elsewhere in Iraq.

With every day a struggle for survival, slum dwellers become experts on parsing risk and opportunity. The groups of armed men who vie to rule over such



(Photo by Leonora Enking, Wikimedia Commons)

Numerous people and families adapt to their surroundings and make their homes in the shanty dwellings 9 February 2010 next to railway tracks in the Dharavi District of Mumbai, India. A mosque that sits inside the slum is clearly visible in the background, and the railway network provides mass transit to the slum residents.

desperate and opportunistic populations tend to rely on a common strategy called “competitive control.”

Competitive Control in a Megacity

In his book *Out of the Mountains: The Coming Age of the Urban Guerrilla*, David Kilcullen proposes a theory of competitive control to explain the ways in which a nonstate armed group will attempt to control local populations.⁹ The concept is that a population will seek a predictable system of norms that tells its people exactly what they can and cannot do in order to be safe. The ability to impose a predictable framework for daily life, along with the sense of safety it engenders, surpasses all other considerations in determining which group the population will support. This tendency is particularly pronounced among the most vulnerable populations, whose lives are defined by uncertainty, such as the rural migrants and refugees in Sadr City.¹⁰

Armed groups, from street gangs to powerful shadow governments like Hezbollah, attempt to impose such systems of control on populations. They do this through a combination of inducements,

linked to penalties, to prevent backsliding or betrayal. The number of factors—both inducements and penalties—that an armed group can credibly deploy comprises its spectrum of control. The wider a group’s spectrum of control, the more durable its hold on a target population.

Competitive Control in Sadr City

The Shiite cleric Muqtada al-Sadr’s movement sought to impose the widest possible spectrum of control on the people of Sadr City—and was quite successful at doing so. The Sadrist spectrum of control went beyond most armed groups by encompassing bona fide religious legitimacy. The Sadr family’s legitimacy was burnished by remaining in Iraq during Saddam Hussein’s rule, where they suffered and died beside the oppressed Shiite people.

For decades, the Sadr family ran a robust and reliable network of charities throughout the Shiite areas of Iraq, particularly among the impoverished masses. Hundreds of thousands of poor Shiites came to depend on the Sadrists as their primary subsistence lifeline. This is not to overstate the Sadr network’s largesse. No

one was lifted out of poverty: unemployment remained rife, infrastructure unrepaired, and waste uncollected. Nonetheless, compared to an overtly hostile and repressive Baathist government, the Sadrists' limited initiatives earned tremendous loyalty among the slum's population. The sentiment expressed to a U.S. officer in 2004 was, "even if you paved my street in gold, I'd still follow Muqtada al-Sadr."¹¹

After 2003, the founding of the Jaysh al-Mahdi (JAM) strengthened the coercive portion of the Sadrist spectrum of control with religious courts sentencing and gruesomely punishing those who defied Sadrist control structures. JAM was no slouch when it came to conflict, battling repeatedly against U.S. military forces, ruthlessly purging whole districts of Sunni residents, and manning checkpoints to guard against the very real and murderous threat of al-Qaida bombings. JAM, in affiliation with the broader Sadrist organization, was able to maintain competitive control of Sadr City through half a decade of opposition by the cream of the U.S. Army. How JAM's competitive control was eventually disrupted can be seen in a juxtaposition of military operations in 2004 and 2008—two years that saw Sadr City's heaviest fighting.

The Battles of Sadr City: 2004 and 2008

Liberated by U.S. Marines in the initial invasion, Sadr City was assigned as an area of operations (AO) to a succession of U.S. Army battalions from 2003 to 2006. In March 2004, Task Force Lancer, based around 2nd Battalion, 5th Cavalry Regiment (2-5 CAV), from the 1st Brigade Combat Team, 1st Cavalry Division, took charge of the Sadr City AO with roughly 600 personnel, replacing 2nd Squadron, 2nd Armored Cavalry Regiment. They arrived determined to make progress across multiple lines of effort, with the intent of checking the influence of JAM insurgents, rebuilding and improving infrastructure and services, training Iraqi security forces, and enabling a soon-to-be elected Iraqi government to take control of both the district and the nation.¹²

Contrary to Task Force Lancer's urban renewal plans for Sadr City, the district exploded in conflict within days. On 4 April 2004, JAM began an uprising across southern Iraq. Openly joined by local Iraqi police, and with mass desertion by local Iraqi National Guardsmen, JAM quickly seized what it considered to be key terrain, overrunning the police stations and attacking the district

council office. JAM also ambushed and threatened to overrun a U.S. platoon, quickly pulling armored and mechanized forces from six U.S. battalions into 82 days of ferocious, sustained street fighting. Muqtada al-Sadr declared a cease-fire in May due to pressure exerted on the Sadrists in An Najaf, and the conflict settled into simmering insurgency before a second major uprising from August to October 2004.

Understanding that they lacked the manpower to control such a large population, and lacking resources and enablers not yet available in 2004, Task Force Lancer focused on the most destitute and violent areas in Sadr City's northern reaches while a succession of other battalions rotated through Habbibiya and Jamila. The task force built a concrete wall along al-Quds Street, separating Sadr City proper and the bulk of JAM from the Jamila Market. Aware of the investments and opportunities south of the wall but denied access to them in their own *mahallas*, Sadr City's population began to pressure local leaders and Sadrist imams. With the span-of-control ante raised, and unable to defeat the U.S. forces who nightly parked Bradley fighting vehicles in the heart of their neighborhoods and killed JAM fighters as they attacked, JAM relented. Soon, civic leaders in Sadr City were personally clearing improvised explosive devices (IEDs) from their streets in order to entice U.S. money back north of the wall.¹³

In 2004, military operations in Sadr City were considered Multi-National Division–Baghdad's decisive operation, but U.S. forces were completely on their own. The provisional government of Iraq (GOI) lacked capacity and legitimacy, and directed security forces incapable of anything but the occasional atrocity. When it was relieved in place by the 3rd Battalion, 15th Infantry Regiment (3-15 IN), 2nd Brigade Combat Team, 3rd Infantry Division, in January 2005, 2-5 CAV had killed approximately 1,700 JAM fighters and invested millions of dollars in infrastructure and services but left an AO where the only viable groups competing for control were Americans—very publicly trying to get out of Iraq—and the Sadrists.¹⁴

U.S. policy goals to expediently transition authority and security responsibility to Iraqis, along with an absence of another JAM uprising, reinforced the inclination among U.S. leadership to be rid of the Sisyphean labor of Sadr City. The Sadrist-influenced Jaafari government readily agreed. When 3-15 IN rotated back to Fort



(Photo courtesy of U.S. Army)

The Sadr City District of Baghdad, Iraq, appears quiet in the days leading up to the 15 December 2005 national elections to elect a permanent 275-member Iraqi Council of Representatives. Sadr City is home to approximately 2.6 million people.

Stewart, Georgia in January 2006, it officially turned its forward operating base and the Sadr City AO over to the Iraqi army. U.S. military transition teams accompanied their Iraqi charges throughout the district, and U.S. special operations forces continued to mount occasional raids, but the slum became officially a virtual no-go area for the Americans when the Maliki government later barred U.S. forces from entry in October 2007.¹⁵ JAM now owned the district in almost every way and was in the heyday of its power and influence.

The year 2008 brought the first effective and coordinated attacks on JAM's spectrum of control—first in the Shiite holy city of Najaf, then across southern Iraq and Baghdad, and finally in Sadr City. The Maliki government, enabled by deliberate and fortuitous developments in the Iraqi conflict, challenged JAM control with an Iraqi army assault on Basra, Iraq's only deep water port, and a shipping and smuggling hub. This mobilized the networked JAM factions across Iraq for a nationwide face-off with government forces. In Sadr City, JAM began rocketing the international "Green Zone." With Basra under assault and JAM forces quickly defeated throughout the rest of Baghdad, coalition forces moved

to take back Sadr City and potentially deal a mortal blow to JAM's spectrum of control in the Iraqi capital.

The 3rd Brigade Combat Team, 4th Infantry Division (3-4 BCT), under the command of Col. John Hort, initially focused on Ishbiliya and Habbibiya. The district's economic key terrain and source of much of JAM's financial resources, these were also the only portions of Sadr City within the maximum range of the 107 mm rockets and mortars fired by JAM at the Green Zone. As in 2004, denying JAM access to the Jamila Market, and to the indirect fire points, would severely hobble both JAM's spectrum of control inside Sadr City and its ability to contribute as a cornerstone of the larger Sadrist national uprising.¹⁶

Moving into the area, 3-4 BCT immediately encountered the same enthusiastic, but tactically crude, mass attacks that Task Force Lancer had faced years earlier. In the fierce, sustained street fighting, lightly armored vehicles, including up-armored Humvees and Strykers, were unable to withstand the inevitable hits from rocket-propelled grenades and improvised explosive devices. Additional heavy forces were once again brought in to bolster the U.S. effort.¹⁷



(U.S. Air Force photo by Tech. Sgt. Cohen A. Young)

Soldiers from 1st Battalion, 6th Infantry Regiment, 2nd Brigade Combat Team, 1st Armored Division, keep a watchful eye on surrounding activities 31 May 2008 as they travel along Route Kansas in the Jamila Market area in the Sadr City District of Baghdad, Iraq.

The second phase of the operation, dubbed Operation Gold Wall, emplaced a concrete T-Wall barrier along the five-kilometer length of al-Quds Street. As in 2004, this physically prevented JAM infiltration into the Jamila Market area and was a “finger in the eye” to JAM’s ostensible spectrum of control. Desperate to stop the wall’s completion, JAM fighters hurled themselves at 3-4 BCT’s prepared defenses. Over the course of six weeks, U.S. and Iraqi forces killed an estimated 700 JAM fighters and several key leaders.¹⁸

Soldiers from 3-4 BCT benefited from a number of enablers, an integrated web of capabilities and authorities unprecedented for a brigade’s control. These included U.S. Air Force fixed-wing close air support, MQ-1 Predator drones and a variety of other armed and unarmed drones, dedicated AH-64 Apache aerial weapons teams, and available multiple launch rocket systems. There was also extensive support from special operations forces, counter-fire radar, RAID (rapid aerostat initial deployment) camera sensors, and other intelligence and surveillance assets. These were integrated in a way that linked the capabilities to tactical units on the ground and employed in innovative and synergistic ways to maximize their effects.¹⁹

Even before the fighting died down, U.S. and Iraqi security forces began an intensive cleanup and reconstruction effort, focused in the more economically vibrant Jamila Market area. The population south of the wall responded through providing greatly increased intelligence and cooperation.²⁰

Perhaps the most important but unsung aspect of the 2008 Battle of Sadr City was the performance of the Iraqi security forces, particularly the Iraqi army. From the disgraceful mass desertions of 2004, through the years of playing second-fiddle to an exasperated and condescending U.S. military, the largely Shiite Iraqi army was finally able and ready to fight alongside U.S. forces as a full participant in major combat operations against JAM. The religious and social ramifications of this made it especially profound and constituted a fundamental assault on core aspects of the Sadrists’ spectrum of control by the more genteel, Iranian-influenced Islamic Dawa Party and Supreme Islamic Iraqi Council politics. Equally important, U.S. forces insisted the Iraqi army fight and win a major battle, seemingly on their own merits, in plain sight of their whole nation.

The effect was significant: in a matter of weeks, JAM crumbled, and Iraqi soldiers owned the streets. On 12

May, Sadr declared a unilateral cease fire, bowing to the clear shift in the Shiite balance of force across Iraq and preserving what clout and combat power remained to him. On 20 May, the Iraqi army 44th Brigade occupied key terrain inside the remainder of Sadr City unopposed.²¹ Unlike 2005, when Iraqi patrols in northern Sadr City were pelted with rubble and excrement, they were cautiously welcomed by people contemplating a calculated switch away from JAM's increasingly narrow and heavy-handed spectrum of control.

Unfortunately, conditions did not improve in Sadr City. The government was more interested in containing the slums than improving them. As a result, Sadr City's infrastructure remains a shambles, and Iraqi security forces have failed to protect the residents from a string of dreadful suicide bombings by a resurgent al-Qaida in Iraq and its successor, the Islamic State. Muqtada al-Sadr, after reorganizing JAM into the socio-religious *mumahidoon* movement and the militant Promised Day Brigades, has retained his deeply-rooted networks in Sadr City.²²

Lessons for the Future

Urban warfare in a megacity environment will be a wide area security mission, supported by combined arms maneuver. U.S. and coalition forces assigned the task will be dwarfed by the scale of cities and populations, as it is not feasible to evacuate millions of civilians from impending battle. The objective will not be to take and clear such an area but to create conditions that force the adversary to "surrender the advantages of the city" and reveal themselves on our terms.²³

The walls across al Quds Street in 2004 and 2008 are examples of this. The walls publicly isolated JAM from its primary source of revenue, the majority of its avenues into the rest of Baghdad, and its primary indirect fire points and improvised explosive device engagement areas. The wall threatened JAM's spectrum of control and forced it into offensive actions against prepared defenses.

Armored vehicles and their effective deployment in sustained street fighting remain critical for combat operations in a dense urban environment. In the Sadr City battles, tanks and other armored vehicles were required to provide survivability and firepower. This implies a significant training effort to maintain competencies in combined arms maneuver warfare.

The population of a megacity or its component slums will defy the capacity of any realistic Western

military coalition to conduct traditional counterinsurgency operations or population control. In steady-state counterinsurgency operations from 2003-2006, one U.S. heavy mechanized and one Iraqi army light infantry battalion were typically responsible for Sadr City—a troop-to-civilian ratio close to 1:2,500—with additional heavy armored forces fighting their way in during heavy combat. After the battles of March-May 2008, a "total of 12 battalions of troops garrisoned Sadr City, with four battalions of U.S. forces providing backup. This approximately equates to a 1:275 troop-to-civilian ratio compared to the 1:50 recommended by the United Nations in peacekeeping operations."²⁴

Megacities and their component slums cannot be ignored. Unable to secure and control the sprawling geography and population, commanders will have to manage risk in allocating their forces and enablers. When U.S. forces largely pulled out of Sadr City from 2006 to 2008, they created a sanctuary and support zone for JAM and its malignant splinter groups. Inevitably, this created conditions that compelled U.S. and Iraqi forces to fight their way back in. Conversely, in both 2004 and 2008, U.S. commanders leveraged a wall and the human terrain to assail a wide swath of JAM's spectrum of control.

Future commanders must similarly exploit "pressure points," enabling relatively small forces to generate out-sized effects, and mitigating resource limitations. Innovative techniques can yield unexpected benefits. For example, Task Force Lancer's weapons buyback program in 2004 was heavily patronized by Sadr City's weapons dealers and had the unintended benefit of causing the street price of weapons like AK-47s and rocket-propelled grenades to temporarily skyrocket out of range of most JAM cells.²⁵

Governance is the key. Louis DiMarco argues that successful urban operations require population representation.²⁶ The most significant difference between U.S. efforts in Sadr City in 2004 and 2008 is the role played by the Iraqi government and Iraqi security forces. The Iraqi government was in no position to challenge JAM's spectrum of control in the early years of Operation Iraqi Freedom. However, by 2008, JAM's spectrum of control in Sadr City had narrowed, becoming more predatory and unpredictable, and less enabled by religious fervor. The Iraqi government and its affluent Shiite polities were ready to mount a muscular challenge for control of Iraqi

Shia destiny. While the United States again dominated in battle and funded improvement projects, the GOI and Iraqi security forces leveraged the assist and wrestled control away from JAM for an important period of time.

Conclusion

The challenges U.S. forces confronted in Sadr City in 2004 and 2008 offer a condensed version of what awaits in future megacities. The ways that U.S. commanders confronted challenges associated with sprawling, crowded slums and an armed adversary's efforts to retain its control,

present lessons that can be applied, scaled up to the division or corps level, in a wider megacity environment.

Future commanders must understand the environment and use enablers and innovative techniques to offset the challenges. They must maintain many of the fundamental strengths of our legacy force and, most critically, must foster credible, enduring involvement by local governance and security forces. Applying hard-won knowledge from the battles of Sadr City and wisely rebalancing future investments, U.S. forces can prepare for conflicts in future megacities and their slums. ■

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