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It is almost as arrogant to rush to judgment on the lessons of a war that is not over as it was to rush out and judge the war plan before it was implemented. History is filled with efforts to make instant judgments about the lessons of war that proved to be based on false information and assumptions.

Saddam and senior Iraqi officials are not clearly dead, nor fled, boxed, captured. Some Special Republican Guards and Republican Guard forces remain as do regular army units. The nation is not pacified and the risk of factional fighting remains.

Nevertheless, some “lessons” are worth raising, if only to reiterate the importance of military fundamentals and the impact of long-standing developments in US and British forces. Others are worth raising simply to broaden the debate to come and avoid a “sound bite” approach to analyzing the lessons of war.

What We Don’t Know

It is important, however, to begin with an admission of ignorance. The war is not over. The US and British commands have issued far fewer “facts” about this war than in the previous conflict. It has also been a confusing conflict in terms of the Iraqi opposition, which has often used mixes of forces it may take weeks or months to fully characterize.

Other key areas of ignorance include:

- A nearly total lack of data on an air campaign that, as of April 9th, involved some 34,000 sorties, some 13,000 strike sorties, 6,850 tanker sorties, 6,500 airlift sorties, and 2,250+ ISR sorties.
- There are no battle damage assessment data on the impact of firing over 750 cruise missiles and some 15,000-16,000 precision guided munitions and 7,500 unguided weapons. (USCENTCOM reports some 70% precision strikes versus 7% for the first Gulf War. Reports of 90% versus 10% definitely do not fit the facts to date.)
- There are few data on the nature of reinforcements between the start of the war and April 9th, aside from the movement of the 173rd Airborne Brigade into the North and rushing elements of the 2nd Armored Cavalry Regiment into the south to protect the logistic lines there. Some 62,000 men and women were moved by air, however, between the start of the war and April 6th.
- It is clear that Special Forces and ranger forces played a major role throughout Iraq, but most details of their operations are not clear.
- Little is known about the fighting in the West and the North.

- Most combat outside Baghdad and brief clashes on the way to Baghdad seems to have occurred in terms of air strikes against Iraqi ground targets and in the form of helicopter and artillery engagements, but there are few data on the nature of the “beyond visual range” combat that Embeds could not report upon.
- The role of “precision artillery” and helicopters is as hard to characterize as targeting and BDA for fixed wing aircraft.
- There is no way to characterize the intentions, capabilities, and nature of the Iraqi leadership from night one onwards, and the rate of decline in f Iraqi C4I capabilities during the war.
- The fate of individual elements of the Republican Guards is not clear. The nature of operations by Iraqi regular army forces, and the strikes against them, is even less clear.
- There are only rough data available on the role and mix of Iraqi special Republican Guards, Republican Guards, regular army, Fedayeen, Popular Army, and other forces.
- Few meaningful data are as yet available on Iraq’s capability and plans to use weapons of mass destruction and only minimal data are available on its missile operations.
- The nature of Iraqi plans and tactics to use its ground-based air defenses are unclear, as are the scale of Iraq’s use of surface-to-air missiles and AA guns.
- There are no data on why the Iraqi air force has been totally passive to date.
- It is clear that the US dropped some 43,8 million leaflets between October 2002 and April 9th, but the full scale of psychological warfare operations remains unclear, as doe the nature of Us efforts to deny Iraqi capability to communicate.
- The are few data on Iraqi plans and capabilities to conduct acts of terrorism, try to bring Israel into the war, or use asymmetric warfare beyond its actions in the cities in the south and use of the Fedayeen, and other irregulars.
- There are no clear data on why so many massive weapons caches have been found in various cities, and whether Iraq planned for a much larger role for the Popular Army and mass volunteers than was ever possible and/or planned for “stay behinds” and conflict after the fall of the regime.
- The Iraqi regime’s overall defensive plan for Baghdad is unclear because it failed so quickly that it is not possible to fully characterize Iraqi intentions.

Lessons About the Interaction Between Military Fundamentals and New Tactics and Technology

Yet, some things do seem clear, and this is particularly true in terms of lessons about military fundamentals and the integration of these fundamentals with new technologies. In many areas, the US and Britain had an overwhelming advantage over the Iraqis which overcame the traditional advantages of fighting on the defensive, on home ground, and with internal lines of communication.

While a detailed analysis of the lessons of war will expose failures and areas for improvement in every area, the following lessons still emerge:

- **Competence and Flexibility in War Planning:** The US and UK began with a war plan reflecting extraordinary professionalism and experience. When elements of that plan failed during the war, they rapidly adapted. When new Iraqi tactics and capabilities emerged, they responded. This professionalism and adaptability in planning was greatly aided by major advances in computerization and integration at every level.
- **Situational awareness, Intelligence and Strategic Reconnaissance (ISR), and Command, Control, Communications, Computers, and Intelligence (C4I):** The US had vastly improved every aspect of its intelligence, targeting, and command and control capabilities since the last Gulf War, as well as had spent some 12 years in surveillance of Iraqi operations and military developments. Its combination of imagery, electronic intelligence, signals intelligence, and human intelligence was honed in Afghanistan, and improved communications and command and intelligence fusion at every level gave it near real time day and night situational awareness.
- **Synchronicity, Simultaneity, Jointness, and Combined Arms:** The US had an almost incredible advantage in terms of its ability to bring together land and air operations and support them from the sea and friendly bases at very high tempos of coordinated operations and shift the mix of joint operations according to need over the entire theater of operations. The issue was far more than Jointness per se, it was the coordination and sheer speed of operations at every dimension of combat.

It is worth noting in this regard that combined arms radically changed the timelines from the first Gulf War. The first war saw a 38-day air bombardment, much of which had to focus on suppressing the Iraqi Air Force and surface-based air defenses before the campaign could shift to attacking Iraqi forces in the KTO, and saw a massive diversionary effort to suppress Iraq's Scuds. This war began with air superiority and moved swiftly on to air dominance. Ground and air operations began on day one, and massive countrywide air and missile strikes against Iraqi leadership targets and ground forces began on Day 3 versus Day 7. In the first Gulf War, the ground advance forced Saddam to order the withdrawal of his forces from Kuwait on Day 41. In this war, US forces advanced within 50 miles of Baghdad on Day 8, entered Baghdad International airport on Day 16, and were in the center of Baghdad on Day 20.

- **The value of training and readiness** emerged clearly in every aspect of US and British operations. The almost incredibly low accident rates, the ability to sustain constant combat operations over some 20 days, the ability to manage extremely complex air operations, the high quality of joint warfare and combined arms are all tributes to the quality of prewar training and readiness.

It is important to note in this regard that US and British forces were able to operate effectively even when in a protection mode against chemical and

- biological weapons, and emerged with far better training for urban warfare than their Iraqi opponents.
- **The human factor:** Truly professional men and women, trained as fighters, rather than garrison forces or military bureaucrats, had a massive superiority in professional skills and unit cohesion over conscript and heavily politicized forces.
 - **Technology:** At the same time, US and British forces had force-wide technical superiority in virtually every area of combat over an Iraqi force that had had only minimal modernization since the summer of 1990, and that only in the form of erratic deliveries of smuggled arms.
 - **24/7 Capability: Owning the Night/Poor Weather Warfare:** US and British forces could both fight and maneuver at night and largely in the dark. US operations also continued in spite of major sand storms, cloud cover, and rain.
 - **Sustainability:** While it gets little attention, US armored and mechanized forces are now the only military forces in the world that can sustain long maneuver movements and combat with sufficient combat and service support forces to maintain nearly 24/7 operations with minimal time for rest and regrouping. For example, the US flew some 6,850-tanker sorties and delivered some 42.5 million gallons in aerial refueling. Coalition forces consume some 40,000 gallons of water a day and 300,000 MREs.
 - **Logistics and Power Projection:** Major advances in logistics at every level from support vehicles to new forms of packaging for shipping and transponder readable coding, plus half a century of practical experience in projection, allowed the US to fight half way around the world with an unparalleled tempo of operations. The ability to refuel aircraft, move fuel and water to maneuver units, maintain and repair equipment in the field, and rearm and sustain was critical to every aspect of operations.

US and British Lessons More Specific to the Iraq War

There is never a clean break between the lessons of war that emerged in the Trojan War, Thucydides, and Sun Tsu and the lessons specific to a given conflict. However, some aspects of the Iraq War do seem to pose unique lessons:

- **Study of the Enemy:** The US had used space and other intelligence assets to study and target Iraq for more than 12 years from the summer of 1990 to the beginning of 2003, and had had to prepare for war several times after 1991. They carried out major strikes in Desert Fox in 1998. This provided a unique degree of situational awareness before the war began.
- **Suppression of Enemy Air Defense (SEAD):** The US and Britain had some four years of operational experience in suppressing Iraqi air defenses, and were able to use the No fly Zones to sharply reduce Iraqi capabilities before the war began. The wartime suppression of Iraqi air defenses was remarkably well carried out, did not interfere with an immediate shift to other offensive missions, and both rolled up the Iraqi defenses in key areas, and attrited their numbers to the point they lost much of their low altitude air defense effectiveness.

- **Air Dominance:** The ability to paralyze the Iraqi air force and systematic suppression of Iraqi air defenses achieved nearly total air dominance – a level of air superiority the US had never enjoyed in any previous major war.
- **ISR Technology, Processing, Integration, and Near Real Time Information Flow and Targeting:** At this point, there is no way to analyze the relative role of space, UAVs, fixed wing aircraft, SIGINT, ELINT, imagery, Special Forces, and human intelligence. It is clear, however, that the mosaic of intelligence and sensor data was far better than in the Gulf War, and was processed and disseminated far more quickly. Ironically, the 4th Infantry Division – the best-equipped unit to use such capabilities was not committed. It also is not clear just how much the US was able to solve the coordination, processing, data allocation, and bandwidth problems exposed in Afghanistan or deal with new capabilities to retarget aircraft in mid-flight.
- **Precision and focus:** Rather than simply shock and awe, a combination of new ISR assets, new precision weapons, and much better avionics allowed all-weather precision strike operations with excellent targeting, an emphasis on “effects-based” strikes, and careful limitation of collateral damage. Not only did the US make nearly ten times as much use of precision guided weapons relative to unguided weapons, it was able to target them with far more focus and effect.
- **Landpower reinforced airpower and vice versa.** The Iraqi land forces were forced to expose themselves by the speed of land operations and then hit hard from the air, which in turn sharply reduce the Iraqi threat to US and British land forces. Jointness took on a new practical meaning.
- **Urban Land Warfare Does Not Have to Be Fought on Traditional Terms:** Much of the concern over urban warfare depends on fighting house-by-house or street-by-street. The US demonstrated that it is possible to use the new degree of situation awareness provided by modern ISR assets to help overcome the enemy’s superior knowledge of terrain, and to the open areas of modern cities to conduct armored patrols with helicopter and air support.

The US showed it could divide cities using key routes and area of concentrations, rather than seeking to occupy large areas, and “take a city” by focusing on seizing key symbols and centers of regime power. The US experience in Al Hilla and Nasiriyah can might be much less effective against better organized defenses, but only if future enemies are more cohesive and have time to organize.
- **Force the Defender to Maneuver and Move Outside of cities:** One possible lesson is also to force the enemy to move forward and engage outside the urban area. The fact the Republican Guard was forced into meeting engagements helped ensure that Baghdad could not be defended effectively. If maneuver warfare can prevent reliance on urban defenses, and indeed static defenses of any kind, it greatly increases the effectiveness of every element of joint warfare.
- **Urban Close Air Support is a Reality:** The US conclusively showed that modern air power can target and strike even in cities with great effect and minimal collateral damage.

- **The Marines are “Post-amphibious”, and “Post-littoral forces.”** The Marines proved they remain true expeditionary forces that can carry out heavy armored combat at long ranges from sea.
- **Limiting Casualties and Collateral Damage:** Even Iraqi claims (Some 1,252 killed and 5,103 injured as of April 3rd) indicate that the US and UK inflicted negligible civilian casualties and collateral damage in historical terms. (The US cannot really estimate Iraqi military casualties. All it has said is that they were more than 2,320 dead as of April 8th,

US casualties were only 105 dead (82 KIA), 7 POWs, and 8 missing on April 10th, and British casualties totaled 30 dead.) It is difficult to generalize, but the one key irony behind the increased lethality of modern weapons and tactics, is that they can be used to defeat the enemy with far fewer secondary costs.
- **Aircraft Carriers:** US carriers again demonstrated that they are critical substitute for air bases that can now be supplemented with cruise missiles. At the same time, the need to deploy five carriers for one major regional contingency validates the US Navy emphasis on new carrier designs that can hold more aircraft and sustain higher sortie rates.
- **Cruise Missiles:** The cruise missile again demonstrated a steadily increasing lethality. At the same time, the cost of some 750 missiles approaches \$1 billion, and some missiles again went off course in politically embarrassing ways. The need to cost engineer cruise missiles to much lower prices and find some form of self-destruct remains a lesson of this war, as it has in every war since the Gulf War.
- **Mine Warfare and Naval Raids:** The Iraqis failed to use mines and suicide boats effectively, but it is clear that the anti-mine and ship protection mission remain critical.
- **Rapid and Reliable Characterization of Chemical and Biological Agents and Proper Protection Gear/Systems:** The fact that Iraq did not use chemical and biological weapons did not prevent repeated needs to use protection. In many cases, more sophisticated and quicker reacting detectors and grids could have reduced the strain on US and British forces.

Iraqi Problems and Shortcomings

Many of the lessons regarding Iraqi failures have already been discussed in talking about the advantage of US and British forces. Iraq's military faults are virtually the reverse image of US and British military capabilities.

There are, however, some lessons that are worth mentioning:

- **Iraq really was a tyranny:** There is almost no evidence of broad popular support for Saddam Hussein, although the Iraqis scarcely showed an overwhelming welcome to US and British forces. The Popular Army did not emerge as a meaningful force. Virtually all of the resistance in the south came from loyalist cadres and forces Saddam had used to reestablish control over the south after the uprisings in 1991. The same factors meant that Saddam could not develop a

popular defense of Baghdad, and his cadres could only fight in scattered areas and without cohesion and coordination. The regular – heavily conscript – army showed far less commitment to the regime than the Republican Guards.

- **Iraq had rival, politicized, bureaucratic, and compartmented forces:** Iraq's overlapping structure of forces and security elements were often better at watching each other and securing the regime than fighting. There was little coordination except at the local level, and command and control could not direct cohesive action,
- **Iraqi command and control was never effective, and Iraq could never recover in the face of airpower and the speed of the US advance.** It is unclear just how much of the Iraqi collapse was the result of attacks on its C4I assets, the ability of allied airpower to paralyze its operations, and the slow-moving nature of Iraq's land forces. Iraq was driven out of balance by the speed of US maneuver, however, and by the flanking movement through the Western edge of the Euphrates and then the drive along the Eastern edge of the Tigris.

Once the US approached Baghdad it could neither maneuver quickly enough to establish a cohesive defense in depth or cope with US penetrations, and its decision-making cycle fell steadily behind the realities on the ground. By the time the US entered Baghdad, it had lost force cohesion and committed its best forces – the Republican Guards – in a piecemeal way in meeting engagements that virtually ensured its destruction.

- **A blind force as well as one without a brain:** Iraq had not satellites, minimal UAV assets, no survivable reconnaissance assets, poor artillery radar capability, no other airborne intelligence assets, and conducted minimal active reconnaissance. If its C4I problems deprived it of a functioning brain, its lack of modern ISR assets effectively left it blind in most aspects of combat beyond visual range.
- **Iraqi irregular warfare tactics were unexpected but more an irritant than effective.** Iraq seems to have badly exaggerated the potential importance of its tactics in trying to draw US and British forces into the cities in the south and the value of using irregular forces. In practice, these tactics produced clashes and occasional successes, but the US quickly adjusted its tactics to bypass most cities, secure key bridges and routes, and give the pacification of cities secondary importance. While the regime was often creative, it failed at fundamental like blowing bridges, creating large popular army forces that could present a serious threat to the US flanks, blowing oilfield, etc. Rather than fright or paralyze US and British forces, it largely succeeded in making them angry and delaying the humanitarian effort.
- **Misuse of urban warfare:** One ironic sub-lesson is that the bypasses and road nets that avoid cities greatly reduce their importance as potential defenses and barriers, and the best way to win an urban war is to avoid one.
- **Iraq failed to use its weapons of mass destruction.** There is no way to know how many weapons Iraq had or what its plans might be. The war caught Iraq, however,

at the moment it was trying to prevent a conflict by complying with the IAEA and UNMOVIC and where it may have destroyed many of its holdings or dispersed them too far to recover.

Allied air power probably paralyzed any efforts to recover most such weapons, and certainly destroyed many potential delivery systems. US, UK, and Australian Special Forces were much better organized and equipped for the mission than in 1991, and much better supported with intelligence. The impact of eight years of UNSCOM and IAEA activity may also have done much to force Iraq to destroy its holdings,

There is also the possibility that Iraq felt sufficiently secure from an actual invasion so it shifted to a strategy of research and development and reliance on dual-use facilities to produce more weapons in the future. If so, it never had the chance to produce such weapons. The lesson unfortunately, is that there has never been an assurance Iraq could not use such weapons or that any other proliferating nation will not use them in the future.

- **Iraq failed to use its missiles effectively.** Missile, like bombs, are not terror weapons unless they can be used in sufficient numbers or with sufficient lethality to have major killing or destructive effects. Iraq was never credited with more than 12-25 surviving Scuds and its Al Samoud II and Ababil missiles and rockets lacked the range, accuracy, and lethality to be much of a threat. Missile defenses and attacks on delivery systems further degraded a largely symbolic capability.
- **Failure to use water barriers:** For whatever reason, Iraq move too slowly to make use of water barriers, blew only a few bridges and often only partially and failed to defend against bridging and crossings as effectively as it should.
- **Force protection:** Iraq left many of its soldiers without meaningful protection gear and body armor, wasted committed personnel in suicide attacks, and could not evacuate personnel effectively. Attacks against unprotected civilians are one thing; attacks against alert and well-protected soldiers are another. Committing forces without proper personal protection does not produce martyrs, simply needless casualties.

The Value of Allies and Build-Up Time

There are some clear diplomatic lessons about regional friends and allies. In spite of all of the reservations before the war, the United States obtained sustained support from Kuwait, Oman, and Qatar and quiet support from Saudi Arabia. It was able to deal with the key logistic problems in its build-up by slowly delivering virtually all of the supplies and major land combat equipment used by sea over the period from June 2002 to February 2003.

It had access to the critical bases need for operations. Host countries in the Gulf made substantial adjustments to accommodate a democratic Turkey's refusal to allow the US to create a northern front or use facilities in that country. Egypt allowed free transit through the Suez Canal, and Jordan quietly allowed US operations in the south as well as overflight operations.

Saudi Arabia allow overflights by US aircraft and missiles, the use of the Combined Air Operations Center (CAOC) for air operations, and the use of Ar Ar for search and rescue missions. Above all, it ensured the flow of oil exports in ways that helped compensate for the loss of Iraqi and Venezuelan exports.

Israel permitted overflights, did not increase the tempo of its operations in the Second Intifada, and relied on defense in the initial phases of the war.