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Revisiting The 2007 Surge In Iraq[1]

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Introduction

The rise of the radical Sunni militant movement known as the Islamic State in 2014 echoes a similar deterioration in overlapping regions of Iraq in 2006. A question of significant relevance is what role did the change in US military strategy in 2007, known as "the surge," play in reversing this earlier situation. In a narrow sense, the surge could refer only to the increase in US troops in Iraq from January 2007 to July 2008.[2] In a broader understanding, however, the surge is also usually associated with using a new counterinsurgency (COIN) doctrine that focused on protecting the population, a willingness to partner with Sunni tribal militias known as the Sons of Iraq (SOI), and a greater resolve to confront Shia militias and Iranian influence.[3]

[1] The opinions expressed in this article are those of the authors and do not represent, or otherwise reflect, any official opinion or position of the Government of Canada, or any of its departments and agencies.

[2] In his "New way forward" speech, President Bush announced the deployment of 21,000 troops. This figure was later augmented by an additional 7,000–see Michael E. O'Hanlon, Jason H. Campbell, "Iraq Index: Tracking Variables of Reconstruction & Security in Post-Saddam Iraq," The Brookings Institution (June 28, 2007), p. 5.

[3] The US Army, *FM 3-24 Counterinsurgency* was first published in December 2006. However, the other strategic elements to the surge became part of the operational plan much later. Initially, there were no plans to expand the Anbar Awakening beyond Anbar—see Michael R. Gordon and Bernard E. Trainor, *The Endgame: The Inside Story of the Struggle for Iraq, from George W. Bush to Barack Obama* (New York: Pantheon Books, 2012), p. 305.

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The change in strategy was implemented as a result of an increasingly intense security situation in Baghdad and surrounding belts in late 2006. At the time, there were contrasting opinions of how to reverse the tide of sectarian violence in Baghdad. The main proponents of a military surge were Gen. Odierno and the National Security Adviser Steve Hadley against the opinions of Gen. Casey, Defence Secretary Rumsfeld, and US ambassador Khalizad, who perceived any additional forces as an impediment for Iraqi Security Forces' (ISF) development. [4] Nevertheless, the final decision favoured the deployment of additional US troops in Iraq. The build-up phase of the surge was completed by the end of May 2007, followed by a series of operations ("Arrowhead" series) that began in June.[5] The surge eventually came to be considered as one of the most significant military events in recent history precisely because it seemed to have brought a marked decrease in violent attacks in 2007.

In addition to its historical significance for Iraq, the surge has and continues to influence debate among US defence policy makers and in other NATO countries about what military capabilities (conventional vs. asymmetric) are needed to address future security challenges and counterinsurgency (COIN) theory. This paper aims to caution strategic policy decision-makers against misinterpreting the efficacy of surge capability in a complex and dynamically changing security situation. [6]

There are a number of discourses that argue for the surge's significance in the reduction of violence in Iraq in 2007,[7] discourses that reject its significance,[8] and others

[4] Ibid., pp. 294-300.
[5] David Kilcullen, *The Accidental Guerilla* (Oxford: Oxford University Press, 2009), p. 144.
[6] Remarkably, there is no direct attribution of the efficacy of the surge in the recently released US Army Field Manual on Insurgencies and Countering Insurgencies, which might simply reflect the uncertainty in the significance of the surge in Iraq, as underscored in this paper—see US Army, *FM 3-24/MCWP 3-33.5: Insurgencies and Countering Insurgencies* (Washington, DC, 2 June 2014).
[7] The success of the surge is usually the dominant discourse in political and military circles. See for example, Kim Chapman and Julianna Goldman, "Obama Says Iraq Surge Success Beyond Wildest Dreams" *Bloomberg*, September 4, 2008, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aM9XOyqf06lI ; Sen. Lindsey Graham speech at the Republican National Convention in 2008, available at: http://www.npr.org/templates/story/story.php?storyId=94303964; and General David H. Petraeus, "Report to Congress on the Situation in Iraq" (10-11 September 2007). This is also the framework in the first major study devoted specifically to the Surge – see Kimberly Kagan, *The Surge: A Military History* (New York and London: Encounter Books, 2009), pp. 196-197.
[8] Joel Wing, "Rethinking the Surge in Iraq," August 22, 2011, http://musingsoniraq.blogspot.ca/2011/08/re-thinking-surge-in-iraq.html; Joshua Thiel, "The Statistical

that view its significance as unresolved.[9] Bridging the two opposing views, Biddle, Friedman, and Shapiro argue for an interdependent synergy between the surge and other factors such as the SOI standups.[10] Their study, "Testing the Surge," is based on declassified "significant activities" (SIGACTs) data that were initially collected by the Multinational Force-Iraq (MNF-I) from February 2004 to February 2009.[11] The authors supplemented these data with interviews of in-theatre commanders for additional qualitative analysis to deduce the causation of the decline of violence in 2007 Iraq. Since our paper revisits some of their conclusions and methods of analysis, we begin with a short overview of their study.

"Testing the Surge" starts with a rebuttal of the thesis that the reduction of violence occurred as a result of sectarian bloodshed burnout (homogenization of previously mixed communities).[12] They advanced evidence that most of the violence in 2005-06 occurred in the sectarian-homogenous province of Anbar (Sunni) and that violence did not cease after mixed neighborhoods (e.g., Baghdad) were "unmixed" – it simply moved on to other sectors of the city. This process of de-homogenizing was far from complete in 2007 when violence began decreasing. Second, the article argues that the Anbar Awakening by itself was not sufficient to explain the reduction of violence.[13] The authors discuss four previous attempts by the Sunni tribes in Anbar to break with Al-Qaida and realign with coalition troops, none of which was successful. In their opinion, each of these attempts did not receive sufficient support from US forces

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Irrelevance of American SIGACT Data: Iraqi Surge Analysis Reveals Reality," *Small Wars Journal*, April 2011); Wayne White, "Iraq: US "Troop Surge" Magic Bullet Myth Lives," accessed on January 11, 2013, http://www.lobelog.com/iraq-us-troop-surge-magic-bullet-myth-lives-on/

[9] Tom Bowman, "As the Iraq War Ends, Reassessing the U.S. Surge," *NPR*, December 16, 2011, http://www.npr.org/2011/12/16/143832121/as-the-iraq-war-ends-reassessing-the-u-s-surge.

[10] S. Biddle, J. Friedman, and J. Shapiro, "Testing the Surge: Why Did Violence Decline in Iraq in 2007?" *International Security* 37, 1 (2012): pp. 7–40.

[11] A SIGACT usually refers to variety of violent acts, targeting coalition, Iraqi Security Forces (ISF), civilians, Iraqi infrastructure and government organizations, observed by or reported to Coalition Forces. The unclassified SIGACT data are now available at the Empirical Studies of Conflict Project (ESOC) website (https://esoc.princeton.edu/about-us). For a detailed description of the dataset see Eli Berman, Jacob N. Shapiro, and Joseph H. Felter, "Can Hearts and Minds Be Bought? The Economics of Counterinsurgency in Iraq," *Journal of Political Economy* 119, no. 4 (August 2011).

[12] Biddle et al., "Testing the Surge," pp. 13-18.

[13] Ibid., pp. 18-22.

(presumably, by the lack of troops in the area) at the initial stages in order to succeed and spread out.

The authors credit the surge with providing enough troops to clear and hold wider areas, and acknowledge the doctrinal (i.e., COIN) changes that tasked US forces to protect Iraqi civilians directly. Nevertheless, the article argues that although the surge was necessary, it was also insufficient due to its modest impact on troop density, its temporally limited nature, and because of the uncertain impact of the doctrinal change.

To investigate what led to the reduction of violence, Biddle et al. compared SIGACT trends from three to twelve months before and after the SOI in 38 Areas of Operation (AOs) using linear regression. By comparing the "pre" and "post" trends (i.e., slopes) of SIGACTs, they concluded that the SOI standup impacted the reduction of SIGACTs in 24 AOs (63 percent) where violence trended down more after the standup than before. That trend was even more pronounced in the more critical AOs. Extensive qualitative arguments were provided to explain the 37 percent outlier cases.[14] Without the SOI standup, the authors further surmised that violence might have still declined, but so slowly that it would have taken more than three years to reach the level that was attained with the SOI in just a few months, and long after the mandated duration of the surge. The article thus concludes that the standup of the SOI had a synergistic effect on the reduction in violence in Iraq during 2007,[15] which had previously been largely attributed either to the surge or to the standups alone.

There are already a number of scholars who have criticized "Testing the Surge" in a Letter to the Editor exchange in *International Security,* 2013.[16] These scholars did not agree with the importance given to the Awakening and the SOIs, the linearity of the analytical method being utilized, or the omission of other factors, such as Jaish al-Mahdi militia's unilateral cease-fire, and even the role of Iranian meddling on the minds of

[14] "Testing the Surge," p. 32.
[15] Ibid., p. 23.
[16] See John Hagan, Joshua Kaiser, and Anna Hanson, as well as Jon R. Lindsay ad Austin G. Long, in "Correspondence: Assessing the Synergy Thesis in Iraq," International Security 37, no. 4 (Spring 2013): pp. 173-189.

Iraqi Sunnis. In the same issue of *International Security*, Biddle et al. responded by providing counter-arguments to the mostly qualitative critiques of their opponents.[17]

In our opinion, the synergy thesis continues to be questionable, but the topic is obviously so complex that relying primarily on qualitative arguments can simply favor the more convincing debater. In this paper, we rely on rigorous statistical analysis to scrutinize the same SIGACT data as used by Biddle et al. We found that violence in Iraq had peaked before the Sons of Iraq and the Surge came on line. Thus, regardless whether a synergy between the two did or did not exist in 2007, we conclude that it did not significantly impact violence levels in that year. In the second part of this paper, we examine some plausible explanations as to what might have contributed to the decline in violence in 2006.

This study is also focused less on the sectarian aspect of the conflict in Iraq, as Biddle et al. have demonstrated that ethnic/sectarian cleansing "burnout" was not the cause for the reduction of violence in 2007. In fact, sectarian violence has continued over the years, and has risen significantly again since 2013. However, we do not exclude the effects of the sectarian war to have contributed indirectly to other factors, namely, the willingness of Sunnis to partner with coalition forces.

Methodology

To assess the efficacy of the surge, we use the same data as "Testing the Surge." Since the timing of SOI standups are an integral part of the analysis, we also concentrate on the 38 AOs for which the SOI standup dates were identified. The AOs span 22 districts in six provinces largely confined within the Sunni triangle.[18] These six provinces experienced about 83 percent of the violence in Iraq from February 2004 through February 2009 (Table 1). Although the 53,822 SIGACTs analyzed herein represent only about a third of the total SIGACTs reported in the six provinces, they

[17] Stephen Biddle, Jeffrey A. Friedman and Jacob N. Shapiro, in Ibid., pp. 189-198.
[18] See Supplementary Figure 2 in Stephen Biddle, Jeffrey A. Friedman, and Jacob Shapiro, "Supplementary Materials for Testing the Surge: Why Violence Decline in Iraq in 2007," available at https://esoc.princeton.edu/subfiles/supplementary-materials-testing-surge-why-did-violence-decline-iraq-2007.

were proportionally highly representative (r = 0.97) between the number of SIGACTs analyzed and the total reported in each province).

Table 1: Distribution of SIGACTs and AOs per province (*), February 2004 - February 2009

Province	Number of SIGACTs	Percent share of total	Number of AOs	SIGACTs in AOs
Anbar*	31,063	15.9	6	7,634
Babylon/Babil*	4,090	2.1	1	229
Baghdad*	77,619	39.8	18	24,088
Basrah	4,862	2.5		
Dahuk	75	0.0		
Diyala*	18,398	9.4	6	7,929
Erbil	162	0.1		
Kerbala	422	0.2		
Missan	806	0.4		
Muthanna	198	0.1		
Najaf	379	0.2		
Ninewa	22,897	11.7		
Qadissiya	1,157	0.6		
Salah al-Din*	22,567	11.6	5	8,999
Sulaymaniyah	127	0.1		

Tamim/Kirkuk*	8,423	4.3	2	4,943
Thi-Qar	682	0.3		
Wassit	1,052	0.5		
Overall	**194,979**	**100.0**		
***Six provinces**	**162,160**	**83.2**	**38**	**53,822**

It should be pointed out that SIGACT data have numerous limitations and extensive arguments have been made that SIGACT databases are sources of unreliable data.[19] Most noteworthy is that SIGACTs do not capture all the violence that might have taken place since they comprise incidents observed by or reported to coalition forces. Furthermore, the methods and quality of collecting and recording incident data evolved over time, and it is conceivable that earlier data might be less reliable. High incident levels observed in certain locations may simply be a reflection of higher troop presence. Locations also ranged considerably from AOs covering small areas with less than 10,000 inhabitants to others encompassing vast swaths of territory, populated with up to 500,000 people.[20] Finally, SIGACTs do not discriminate the intensity of violence as, for example, they might reflect a disabled IED with no casualties in one instance and a suicide bombing causing a high number of casualties in another. Others have argued that SIGACT data does not offer meaningful insights under statistical scrutiny.[21]

Notwithstanding these criticisms, the large number of SIGACTs can smooth out irregularities. This is reinforced also by comparing the SIGACTs with the database of Iraq Body Count (IBC), which recorded the violent civilian deaths in Iraq since 2003.[22]

[19] See Ben Connable, *Embracing the Fog of War: Assessment and Metrics in Counterinsurgency* (RAND Corporation, 2012), pp. 161-162. Connable gives numerous anecdotal evidence about misreporting, or even lack of reporting of SIGACTs, but admits that for a dataset of hundreds of thousands entries, it will be difficult to discredit it empirically, or vice versa.

[20] See Biddle, Friedman, Shapiro, "Supplementary Materials," p. 13 - Supplementary Table 1.

[21] Thiel, "The Statistical Irrelevance." Thiel's assertion is only valid, however, with respect to the relations between SIGACT and surge troop deployment, which has been confirmed by this study as well.

[22] https://www.iraqbodycount.org/database/.

Although the latter database is also likely incomplete, IBC is a body that collects information independently from coalition forces and is accepted as the most transparent and comprehensive dataset of Iraqi violent civilian deaths.[23] Hence, a close correlation between the two databases would strongly confirm the actual trends of violence. Indeed, the separate measures of violence, as shown in Figure 1, are highly correlated (r = 0.91), thus supporting the use of SIGACTs for further analysis.

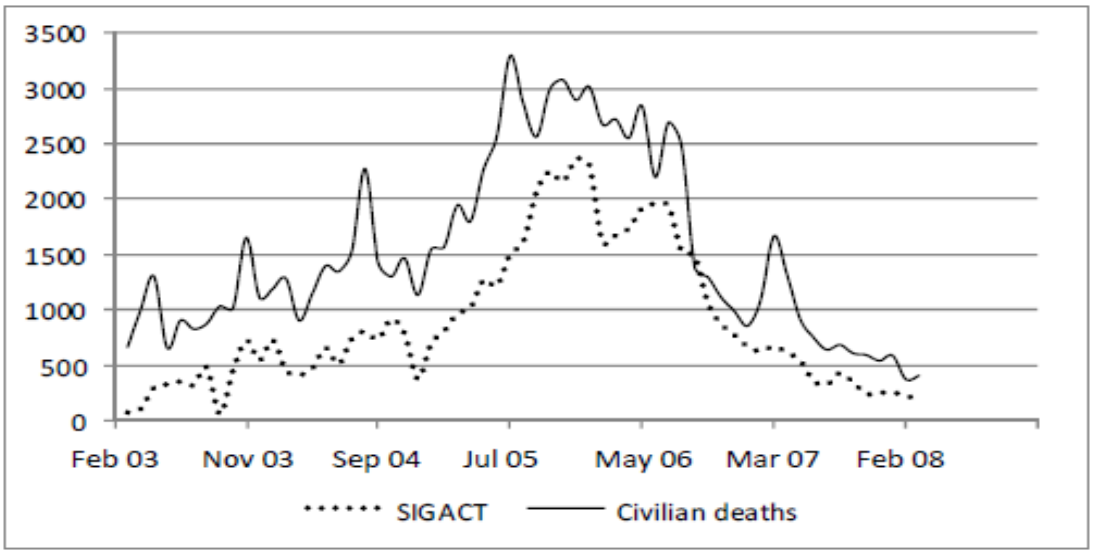

Figure 1: SIGACT and civilian deaths trends, Feb 2003-Feb 2008

We analyzed the SIGACT data in two steps. First, we conducted a detailed descriptive analysis of peak and median SIGACTs and SOI standups in each AO and province using timelines and spatial distribution. Second, we conducted a trend analysis on equal time periods up to and including 12 months of average SIGACTs pre- and post-SOI standup similar to that of Biddle et al., but with the important difference that we did not include the month of SOI standup in the regressions as they did. Thus, our three month period, for example, comprises three data points, not four.[24] Including the additional data point dilutes the analysis since a portion of the data is common to both regressions (e.g., 25 percent in the case of the "three" month pre- and post-trend

[23] See Neta C. Crawford, "Civilian Death and Injury in Iraq, 2003-2011" (Boston University, September 2011), p. 27, http://watson.brown.edu/costsofwar/files/cow/imce/papers/2013/Civilian%20Death%20and%20Injury%20in%20the%20Iraq%20War,%202003-2013.pdf

[24] Each data point specifies the number of SIGACTs for a month; Ibid., p. 11.

analysis), and it misrepresents the actual time period, i.e., the designated "three month" period actually spans four months, the "six month" period spans seven months, etc. It should be pointed out that this is not simply a variation in the modeling. In our view, including the additional data point common to both "pre" and "post" regressions is not only misleading, it also contaminates the analysis. Specifically, the month of SOI standup should not be included in the pre-data if testing for an effect of the standup, since the effect might occur in the month of the standup. This could lead to a "type II" statistical error whereby a true effect is concealed. In other words, Biddle et al.'s modeling choice is methodologically weak.

Another important methodological difference is the assessment of SIGACT slopes pre- and post-SOI standup. Instead of simply counting the number of post-slopes that were more steeply negative, we conducted a statistical test of the overall results. Specifically, we subjected all 38 AO pre- and post-SOI standup slopes of SIGACT from three to twelve months to paired t-tests.[25] The use of statistical testing of the slopes is justified, regardless of the short length of the time series involved since it is the 38 slopes that we are comparing simultaneously and not the significance of any particular slope. For comparison, we also subjected to a t-test the regression results in "Testing the Surge," i.e., including the common data point.

SIGACT and SOI Standup Analysis

As a first measurement for the relation between violence trends and SOI standup we adopt peak SIGACT. To mitigate SIGACT reporting errors we also compare the median SIGACT for each AO as well. For each AO, we noted the months in which the number of SIGACTs peaked and crossed 50 percent of the total reported for that AO, and when SOI standup occurred. Figure 2 shows the timeline of peak SIGACTs and SOI standups for all 38 AOs. Peak violence (peak SIGACT) first occurred in January 2005 and escalated in late 2006. The first SOI standup occurred in October 2006 by which time peak violence had already declined in nine AOs (24 percent). The peak number of standups occurred seven months later (May 2007), but by that time, violence

[25] Trend lines for each AO were based on the percentage of the maximum SIGACT reported for that AO.

had declined in another 16 AOs (66 percent in total). These observations suggest that the general decline in violence was largely independent of the SOI standups.

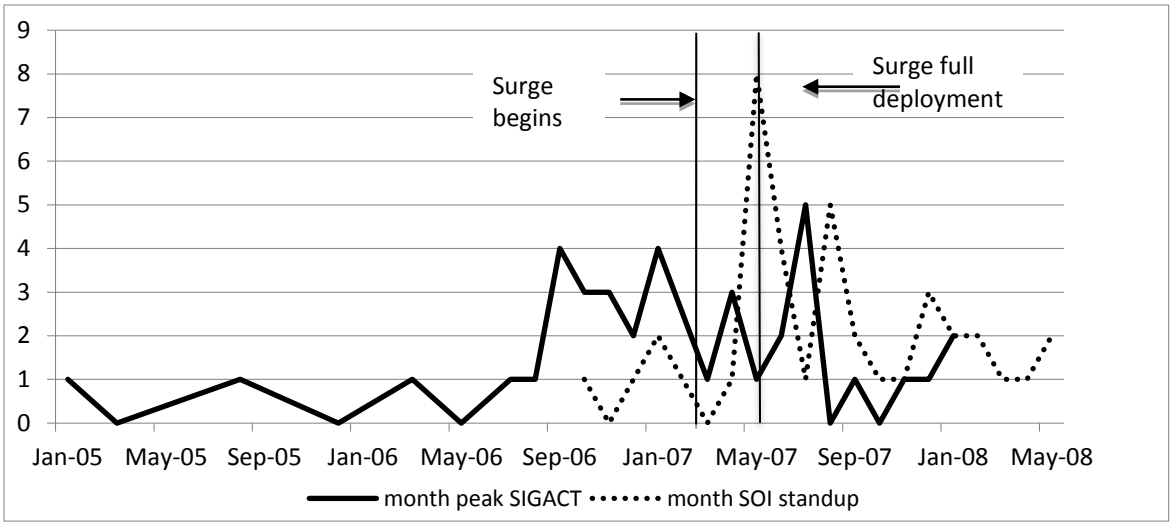

Figure 2: Timeline of peak SIGACT occurrences and SOI standups in the 38 AOs

This supposition is strengthened by noting the separation of the elapsed times between the peak SIGACTs and SOI standups in each AO, as shown in Figure 3. Especially noteworthy are the AOs where SIGACT peaked during 2005-06 (n = 17; Table 2). With the exception of only one of these AOs, where peak SIGACT and SOI standup coincided (Katana), the vast majority of peak SIGACT occurrences are so far removed from the SOI standup (mean lag of 11.2 months) that it is difficult to argue that the latter had anything to do with the overall decline of violence after it peaked. For the remaining 21 AOs where peak SIGACT occurred from 2007 onward, all but seven had peak SIGACT occurrences before SOI standups, again leaving in doubt the efficacy of the standups.

Table 2: Time lag between peak SIGACT prior to 2007 and SOI standup in 17 AOs

Area of Operation	Province	month of peak SIGACT	month of SOI standup	Time lag (months)
Al Dur	Salah al-Din	Jan-05	May-07	28
Khalidiyah	Anbar	Aug-05	Dec-06	16
Sadr al Yusufiyah	Baghdad	Mar-06	Jun-07	15
Mansuriyat al Jabal	Diyala	Jul-06	Jan-08	18
Baladrooz	Diyala	Aug-06	May-08	21
Rawah	Anbar	Sep-06	May-07	8
Hurriyah	Baghdad	Sep-06	May-07	8
Amiriyah	Baghdad	Sep-06	May-07	8
Khan Bani Sa'ad	Diyala	Sep-06	Dec-07	15
Katana	Anbar	Oct-06	Oct-06	0
Haqlaniya	Anbar	Oct-06	Jan-07	3
Taji	Baghdad	Oct-06	Apr-07	6
Khadamiya Urban	Baghdad	Nov-06	May-07	6
Ghazaliyah	Baghdad	Nov-06	Jun-07	7
Rusafa Sheikh Omar	Baghdad	Nov-06	Apr-08	17
Fallujah	Anbar	Dec-06	May-07	5
Dora	Baghdad	Dec-06	Sep-07	9

Further evidence that violence had started to decline well before the SOI standups are found in the timing of median SIGACTs relative to the standups. Figure 3 presents the chronology of the SOI standups, peak SIGACT, and median SIGACT occurrences for each AO. Occurrences of peak and median SIGACT are depicted by the starting point of each line. The length of each line indicates the duration between these occurrences and SOI standups (indicated by the closed squares). The figure shows that SOI standup occurred after peak SIGACT in 30 out of the 38 AOs, representing 81 percent, and after median SIGACT in 36 of the cases (exceptions are only Ash Sharqat and Mansour), representing 95 percent of the AOs.

These numbers are in a stark contrast with the 63 percent AOs that were used to prove the hypothesis of a synergy between the surge and the standups in "Testing the Surge." In fact, we would like to point out that the number of Biddle et al. cases confirming synergy, is only 47 percent (18 AOs) – a very unconvincing number – and not 63 percent (24 AOs).[26] A closer inspection of the confirmatory cases reveals that five of them should not be counted as such. First, in two of the AOs (Katana, Khalidiyah), the SOI standup occurred several months before the surge, and in one AO (Tamim) – at the time of the surge announcement, thus despite the seemingly steeper post-SOI slope decline, these three could not have been cases of a synergy with the surge.[27] In another AO (Dora), we found evidence that the decline of violence was brought about in 2006 by local militia and not by the SOI, which was formally established there only in September 2007.[28] Finally, in two more AOs (Latifiyah and Rusafa Sheikh Omar), there was no difference in the reported slopes up of three months pre- and post-SOI, but the authors nevertheless decided to count these in as confirmatory cases. They did this by looking at examining smaller intervals (one and two months) for these AOs only, which is methodologically inconsistent and amounts to data manipulation.[29]

[26] Hagan, Kaiser, and Hanson have argued that the confirmatory cases are even 42 percent, considering that violence has started to decline in eight of the confirmatory AOs before the SOIs, see Hagan, Kaiser, and Hanson, "Correspondence," pp. 176-7.

[27] Tamim is in Anbar province and could not have benefited from the small amount of surge troops arrived in January 2007, nor from any doctrinal changes which have been executed later.

[28] See the quote by Sheikh Ahmad al-Jibouri about pacifying this Baghdad neighborhood in 2006 in "Fight or Flight: The Desperate Plight of Iraq's "Generation 2000," Crisis Group Middle East Report N°169, 8 (August 2016), p. 21.

[29] Biddle et al., "Testing the Surge," p. 31 (Table 1).

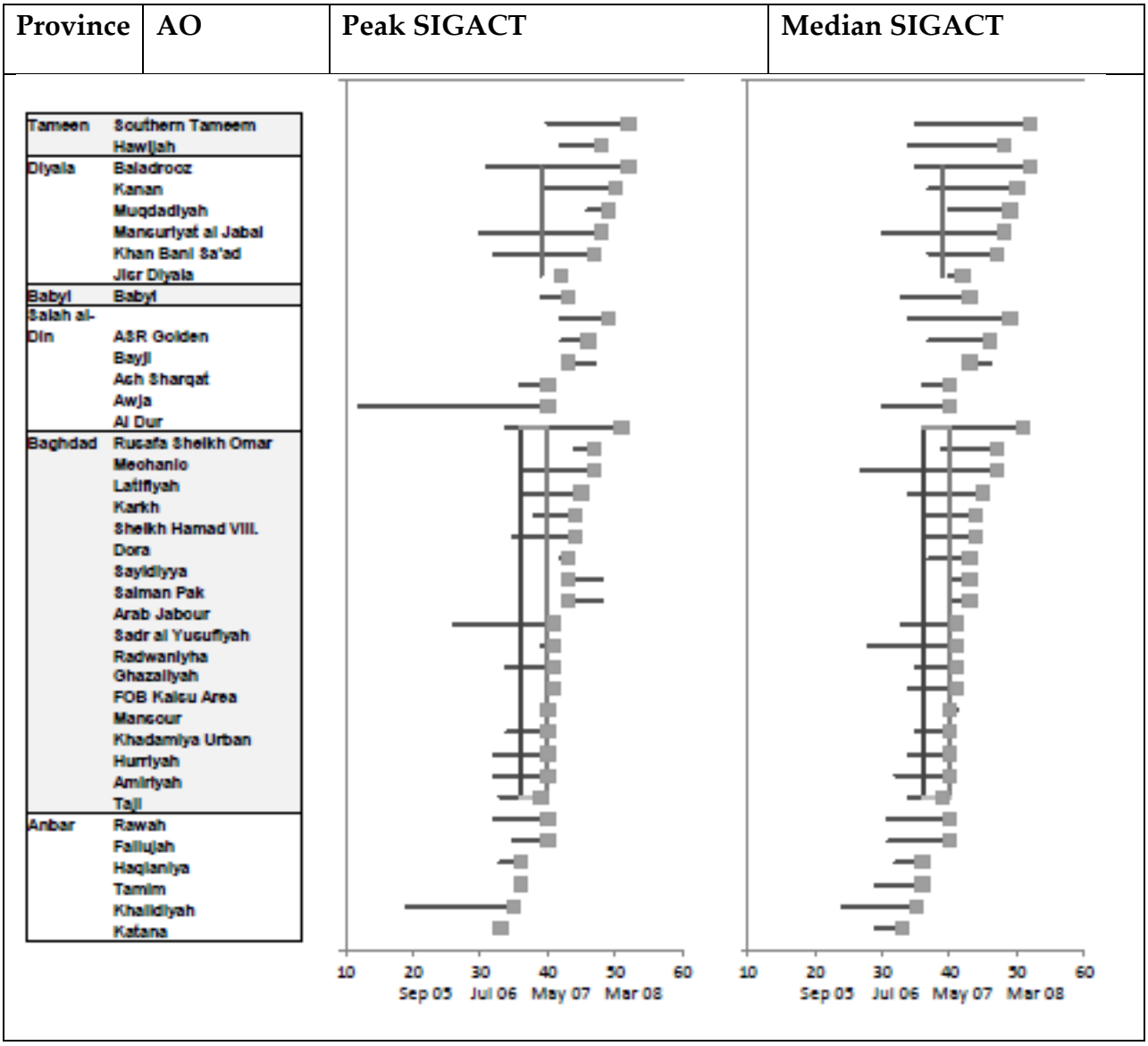

Figure 3: Plot of the surge (vertical lines), SOI standups (closed squares), and occurrences of peak and median SIGACT in each AO by province (indicated by the start or end of the horizontal line connecting the SOI standup; no line indicates no separation between the two)

Finally, a paired t-test between the occurrences of SOI standups with the peak SIGACTs found a highly significant difference ($p < 0.001$) indicating no relationship between the occurrences of SOI standups with either the peak or median of SIGACTs.

Table 3 aggregates the SIGACT and SOI standup statistics by province. The selection of province as the geographical unit of analysis aims to tie the trends discussed above across various AOs to a larger territory (as demonstrated earlier, the SIGACTs analyzed for all AOs in a province are highly representative of the total number of SIGACTs in that province). Table 3 includes the mean percent of SIGACTs at the time of the SOI standups, and the mean occurrences (month) of peak and 50 percent SIGACT, relative to the standups. Although there are considerable variations per province (also seen in Figure 3), without exception, the SOI standup lagged the peak and median SIGACT by several months in each province, and overall by 6.5 and 8.3 months, respectively. This further reinforces the notion that violence started to decline well before the SOI standups.

Table 3: Mean occurrences of SIGACT and SOI standup by province

Province	**Mean month at 50% SIGACT**	**Mean month of peak SIGACT**	**Mean month of SOI standup**	**Lag of standups to 50% SIGACT** (months)	**Lag of standups to peak SIGACT** (months)	**Surge**[30]
Anbar (n = 6)	Jun 06	Aug 06	Jan 07	7.3	5.3	no[31]
Baghdad (18)	Dec 06	Feb 07	Jul 07	6.9	4.7	phased [32]
Diyala (6)	Jan 07	Jan 07	Jan 08	11.5	11.3	Apr 07
Salah al-Din (5)	Jan 07	Dec 06	Aug 07	7.0	7.8	no
Tamim (2)	Nov 06	Jun 07	Mar 08	15.5	9.0	no

[30] Data from Iraq Index.
[31] Deployment of troops was extended rather than added.
[32] Phased deployment began in January 2007 with full strength by June 2007

Babyl (1)	Oct 06	Apr 07	Aug 07	10.0	4.0	no
All (38)	**Nov 06**	**Jan 07**	**Jul 07**	**8.3**	**6.5**	

Another observation that supports the independence of the declining trend of violence from the SOI standups is the spatial distribution of the decline. Specifically, the peak SIGACT occurrences in 2005-06 were spread over AOs in four of the six provinces (see Table 2), while the SOI standup phenomenon was geographically highly concentrated starting in Anbar, and until mid-2007, restricted only to Anbar and Baghdad. Even in these two provinces, violence had already peaked by the mean month of SOI standup (Table 3).

A different perspective can emerge when SIGACTs are compared to the standup of SOIs during the narrowly confined period containing the general decline in violence in each province. That decline began, on average, early in 2007. Figure 4 shows the comparisons of the mean monthly percentage of SIGACTs and chronology of SOI standups in each province. The monthly percentage of SIGACT of each AO was the monthly SIGACT of that AO divided by its total SIGACTs during the 61 month period of study (February 2004 - February 2009).[33] In each case, the correlation between the two at the time of the standups is significant, which can be expected given that violence should decline as the insurgents withdrew from the conflict.[34]

Undeterminable from this is causality, that is, whether SOI standups led the decline in violence or vice-versa. Close inspection of most cases (e.g., Tamin, Babyl, Baghdad, Diyala) reveals a decline in violence well before the standups, which is consistent with our earlier assessment that downplays the importance of the SOI standups.

[33] All monthly percentages of the AOs in a province were averaged with equal weight.

[34] As a cautionary note, the trajectory of SIGACTs is characterized by several spikes, anyone of which could precede or coincide with a SOI standup, which underlines the perils of analyzing short term pre- and post-SOI slopes.

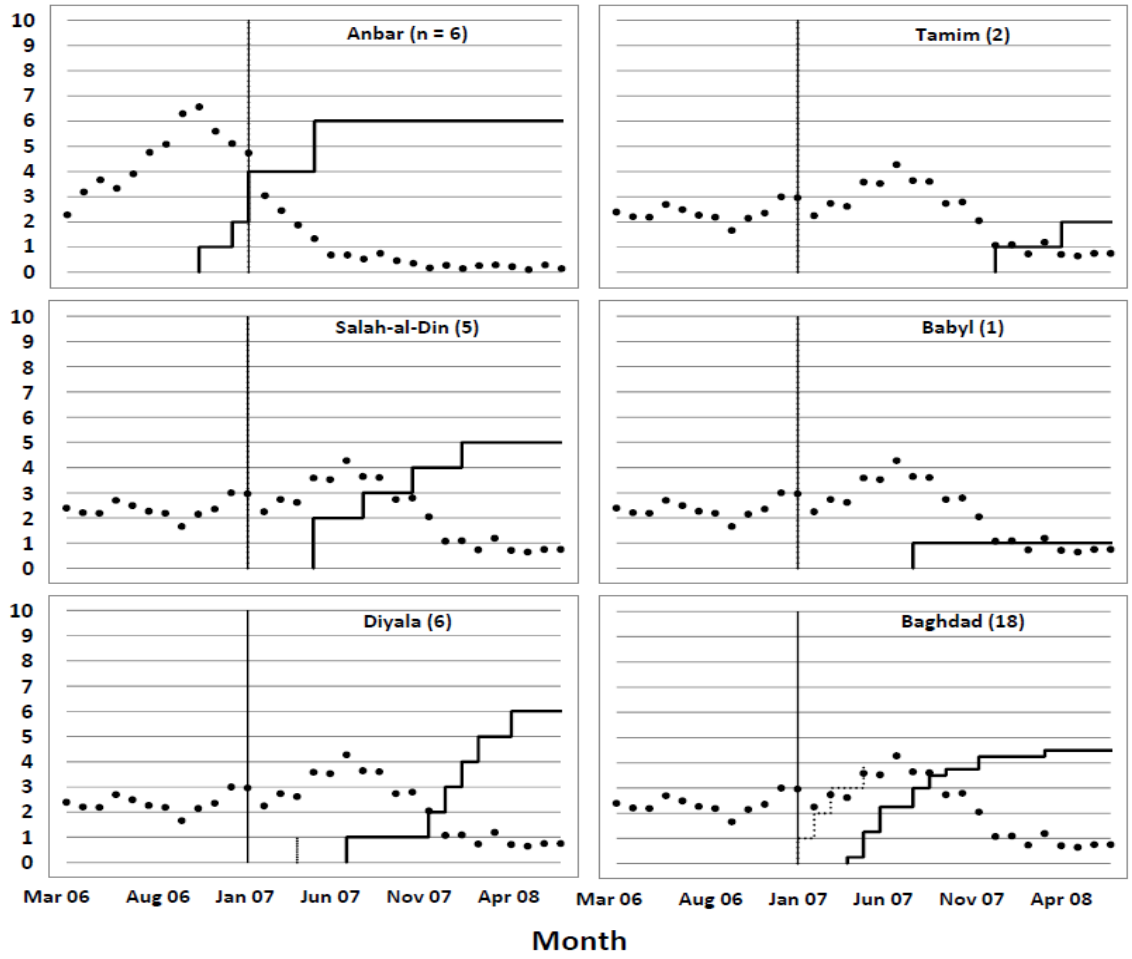

Figure 4: Plots of the mean monthly SIGACTs (●) as a percentage of its total and sum of SOI standups (stepwise solid line) in each province

Note: 'n' indicates the number of AOs in the province. The vertical line at January 2007 denotes the announcement of the surge. The dashed lines denote the deployment of surge brigades in Diyala and Baghdad where each vertical rise represents the addition of one brigade.

Biddle et al. addressed the question of causality by comparing the slopes of SIGACT decline before and after the SOI standup. In particular, in the three month period pre- and post-SOI, they reported a steeper decline after SOI standup in 24 out of the 38 cases (63 percent), which they attributed to the effect of the standup.[35] For methodological reasons, we are not convinced that this conclusion is warranted. First, as pointed out earlier, the confirmatory cases are actually only 47 percent. Second, by

[35] "Testing the Surge," 32.

including a common data point in the regression (i.e., the month of the SOI standup), 25 percent of the data in their pre- and post- slope analysis is the same, thus obscuring the trends (Type II statistical error). Third, the conclusion of a greater decline in violence between post- and pre- intervals was based on the simple observation that there was a greater number of higher negative slopes of SIGACT post-SOI standup than pre-SOI standup. Without statistical testing of the slopes, the ordinary least squares slopes utilized by Biddle et al. can only provide an impression of change, but not a confirmation. As mentioned in the methodology section, we relied on a rigorous statistical analysis between pre- and post-SOI slopes. The latter refutes what Biddle et al. have concluded. First, we compared the pre- and post-slopes reported in "Testing the Surge" (regardless of being methodologically problematic) by performing a paired t-test. Despite a relatively steeper mean post-slope [-5.8 (12.3 SD)% of max/month] vs. pre- [-2.5 (8.7 SD)%] slope, the t-test indicated no significant statistical difference ($p = 0.27$) between the two due to the large variance in slopes. The interpretation of this result is that the seemingly faster decline of violence in the post-SOI slope is illusionary and does not warrant a conclusion that favors the effectiveness of the SOI standups.

Second, we also conducted linear regressions for periods of equal duration pre- and post-SOI standup from 3 to 12 months, but excluding from all the month of SOI standup (which we consider methodologically correct), and tested them for significance. Visually, the results appear to be similar to those observed by Biddle et al., in that in all cases, the mean post-slope was steeper than the mean pre-slope (see Table 4). As noted above, however, visually steeper post-slopes do not necessarily mean a faster decline of violence. Again, the statistical analysis shows this difference to be insignificant for all periods up to and including 8 months. However, a significant difference ($p < 0.05$) was observed for all periods from 9 to 12 months.[36] It should be pointed out that Figure 4 shows the cumulative SIGACTs, which might give the impression of an upwards trend

[36] The t-test result that the pre- and post-SOI slopes of SIGACTs for periods greater than 8 months are different with $p < 0.05$ means that this conclusion has less than a 1 in 20 chance of being wrong. For periods from 3 to 8 months pre- and post- standup, the chance of wrongly concluding that the slopes are different becomes increasingly higher. In fact, for the 3 to 5 months periods, the chance of being wrong is about 50 percent. Hence, a conclusion that the post-slopes in this period indicate a faster declining violence is statistically untenable (a chance of about 6 percent).

in violence preceding SOI standup, however, our statistical analysis is based on the individual assessments of the AOs.

Table 4: SIGACT slopes (percent of max/month) pre- and post-SOI standup in all 38 AOs

Period (months)	Mean pre-slope	SD	Mean post-slope	SD	p value
3	-3.2	14.9	-5.8	10.2	0.46
4	-2.8	9.5	-4.2	9.3	0.56
5	-2.2	8.6	-3.7	8.3	0.48
6	-2.4	6.4	-3.8	5.6	0.34
7	-1.8	5.7	-3.5	4.3	0.16
8	-1.6	5.6	-3.6	3.8	0.09
9	-0.8	4.7	-3.4	3.5	0.02
10	-0.1	4.2	-3.0	3.3	<0.01
11	0.1	3.9	-2.7	2.9	<0.01
12	0.5	3.6	-2.5	2.5	<0.01

To recapitulate, by applying statistical analysis on the change in SIGACTs from three to eight months pre- and post-SOI standup, we found no statistical difference. Therefore, the case for a surge-SOI synergetic impact on the reduction in violence based on a simple numerical comparison of slopes is groundless. However, the demarcation in significance between the pre- and post-SOI slopes for the longer periods of 9-12 months introduces a new element into the analysis. That the mean slope of SIGACTs changes from positive to negative between 10 and 11 months prior to the mean SOI standup indicates that mean SIGACT peaked somewhere near the midpoint (i.e., 5 – 6 months

pre- standup), or further away if the SIGACTs were highly asymmetrical. This finding not only further questions the synergy hypothesis, but points to a different timeline of the decline of violence. Hence, if we are to look for a phenomenon that changed the slope of the decline, it would likely have taken place several months prior to the SOI standup.

In other words, despite the seemingly accelerated decline in violence post SOI standup, the slope analysis using a more rigorous statistical methodology concurs with the earlier analysis of peak and median SIGACTs, relative to the timing of the standup. The latter analysis indicated that an average of 6.5 and 8.3 months elapsed from the mean month of peak and median SIGACT, respectively, to the mean month of SOI standup. Our SIGACT slope analysis is consistent with this and taken together implies that developments in 2006 had not only turned the war by the end of 2006, but that the surge was also not necessary.

Assessing the Impact of the Surge

"Testing the Surge" has contributed to the debate on the impact of the surge by asserting that the latter impacted the violence in Iraq through its synergetic effect with the SOI standups and not by itself, as others have surmised.[37] Indeed, it is difficult to argue against a relationship between the two. The standups in 36 of the AOs (95 percent) occurred after the first surge troops deployed in January 2007 and in 34 AOs (90 percent when sizable reinforcements were already on the ground in March 2007). This trend is clearly visible in Figures 1 and 3 (see Diyala and Baghdad). As the authors of "Testing the Surge" point out, the additional troops provided sufficient protection once the number of standups started to increase. It is perhaps no coincidence that the peak month of SOI standups (May 2007) occurred when the surge achieved its full strength. However, if the SOI standups are not the main cause of the decline in violence, as we argue above, to what extent did the surge or its synergetic role contribute to the decline in violence?

[37] Ibid., pp. 10-11.

To assess the longer term impact of the surge, we first consider that peak and median SIGACT respectively occurred in 17 and 23 AOs before the surge was even announced in January 2007 (see Table 2 and Figure 3). Furthermore, in four more AOs (Karkh, Latifiyah, Tamim, and Awja), SIGACTs peaked in January 2007 at the time of the surge announcement. Although we acknowledge that the announcement may have had some psychological effect, none of the other elements associated with the surge, namely the extension of SOI standups to Baghdad, a COIN strategy to protect the population, and the curbing of Shia militias were even part of the operational plan at the time.[38] Three more AOs also reached their median SIGACT mark in January 2007, thus bringing the total to 26. Thus, by the end of January 2007 when troops had just started to arrive in theatre, 21 (55 percent) of the AOs had reached peak SIGACT and 26 (68 percent) had reached the 50 percent mark. It is even possible that this number may have been higher due to a less reliable reporting in 2006. The logic is that as MNF-I became increasingly cautious in 2006 because of mounting US casualties and troops hunkered down in the FOBs, arguably the reporting was affected as well. If that assertion is correct, the actual SIGACT might have been higher and thus the decline should have been more pronounced. It is also worth pointing out that the AOs that had reached peak SIGACT before the surge are not insignificant given that the pre-January 2007 peak SIGACT AOs had an average peak SIGACT of 98, compared to 82 of those that peaked afterwards. Geographically, all AOs in Anbar, 55 percent of those in Baghdad, and 50 percent in Diyala reached peak SIGACT and the 50 percent thresholds by the end of January 2007. Hence, it is most likely that the decline in the other provinces, where surge troops were not present, was again a result of developments that had already taken place prior to the surge in the majority of AOs in Anbar and Baghdad, where the insurgency was the strongest.

In fact, an interesting artifact that is associated with the surge may have obscured the decline in violence that most provinces experienced prior to it. Figure 3 shows that this decline was followed by a steep temporary escalation of violence in Diyala, Baghdad, Tamim, Babyl, and Salah al-Din between March and May 2007. The AOs in the latter three provinces even experienced an intense level of violence not seen just prior to the surge. This phenomenon can be reasonably explained given that the reported increased incidence of conflict is normal with the presence of additional

[38] Gordon and Trainor, *The Endgame,* p. 305.

troops, or with insurgents regrouping elsewhere. As a result of this temporary and significant spike, the ensuing decline in violence can easily be attributed to the impact of the surge and the SOI standups that occurred almost simultaneously. Even though the trajectory of SIGACTs is characterized by several spikes, anyone of which could precede or coincide with a SOI standup, the perspective from a longer timeline makes it clear that the decline is associated with the general trend of decline in violence beginning before the surge announcement. Despite the seemingly faster decline of slopes of violence in 2007, these are only statistically significant when compared with those before the end of 2006, which our analysis suggests was the violence demarcation point. It is likely that had the additional troops not been deployed, the decrease in SIGACT that started for some AOs in the fall of 2006 and for others shortly after would have continued with the same trajectory, driven by the same factors underlying the decrease ascertained for Anbar.

This conclusion is consistent with Joshua Thiel's statistical analysis of the relationship between the change in US troop levels in 2007 and the decline of SIGACT. His study demonstrates that the improvement in security was independent of troop levels (though pertaining only to US troops) and that "another variable or set of variables appears to have affected the entire nation."[39] Even if we consider the surge beyond its impact on troop numbers, i.e., its new campaign strategy, the demarcation in late 2006 violence demonstrates that even taken in its broader understanding, the surge is not the reason for the breakthrough nor did it significantly affect the declining patterns of violence and thus cannot be considered as a watershed in the war in Iraq.

The above conclusions pertaining to the surge and the SOI standups point to other developments in the early months of 2006 that may have contributed to the shifting momentum in the security situation that occurred in late 2006. The Anbar Awakening is the most often cited counter-weight to the surge for the decrease of violence.[40] Although the timing of the Awakening, which began in October 2006, is close to the demarcation point identified above, it should be viewed as a consequence of

[39] Thiel, "The Statistical Irrelevance," pp. 6-7.

[40] See two of the most widely read articles on the subject—Austin Long, "The Anbar Awakening," *Survival* 50, no. 2 (April-May 2008): pp. 67-94; and John A. McCary, "The Anbar Awakening: An Alliance of Incentives," *The Washington Quarterly* 21, no. 1 (January 2009): pp. 43-59.

earlier developments. Below, we analyze some of the trends that could be ascertained from late 2005 to the end of the third quarter of 2006. Although we don't have enough data to firmly attribute any one or a combination of these trends for the breakthrough, they clearly warrant more attention towards understanding their contribution during this important period of the war in Iraq. By focusing primarily on 2006, this study leaves from the discussion the effects of JAM ceasefire on the 2007 levels of violence.

Declining coalition forces but increased efficiency

One noteworthy characteristic of the period from December 2005 until the summer of 2006 is the diametrically opposing trend of coalition (US and other international troops in the country) troop strength compared to the subsequent period from late 2006 through 2007 (Figure 4). From a peak of 183,000 troops in December 2005, coalition strength declined by almost 20 percent to146,900 in June-July 2006 and was still lower at 157,000 in September 2006 – levels not seen since 2003 when post-invasion confidence was at its height. Figure 4 also shows that the surge merely returned coalition troop strength to its peak in 2005.[41] On average, troop strength in the first nine months of 2006 was about 10 percent lower than the average in 2005. It also appears that the coalition footprint was reduced not only numerically, but in terms of providing actual security. For example, US patrols in the capital Baghdad dropped from 360 per day in June 2005 to 89 in July of 2006.[42]

[41] It should be acknowledged that the surge also brought about a qualitative change by bringing more combat troops that targeted certain strategic areas.

[42] Dexter Filkins, "Baghdad's Chaos Undercuts Tack Pursued by U.S.," *New York Times,* August 6, 2006.

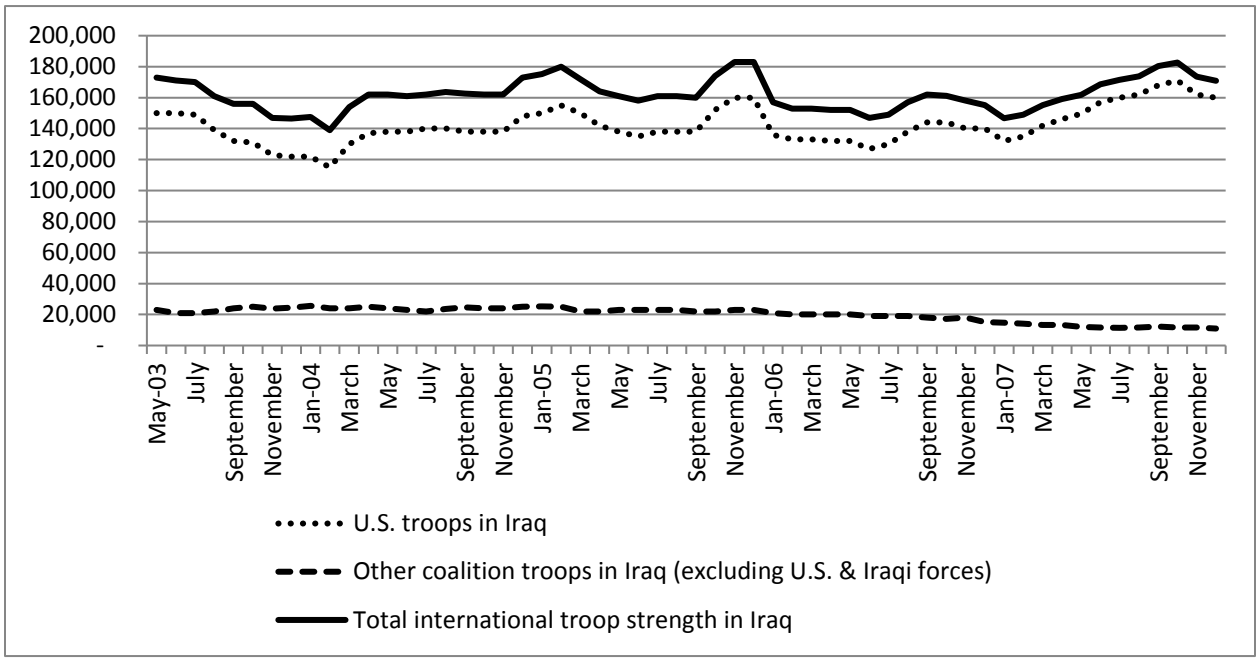

Figure 4: Coalition Troop Strength, May 2003-December 2007[43]

Throughout this period, violence continued to rise in most of the six provinces observed (except Tamim) despite the beginning of peak SIGACT occurrences in some AOs since December 2005 (Figures 1 and 3). At first glance, this concurs with Thiel's conclusion about the irrelevance of troop levels to the number of SIGACTs.[44] Nevertheless, coalition forces decline underscores several other important trends that unfolded in the first nine months of 2006.

First, the US forces went through a learning curve having switched from massed warfare to a counterinsurgency campaign. Especially effective were the Special Forces units of Task Force 714 under Gen. McChrystal. Due to technological, organizational, and tactical advancements, TF714 increased its operational tempo from 18 raids per

[43] Michael E. O'Hanlon, Jason H. Campbell, "Iraq Index: Tracking Variables of Reconstruction & Security in Post-Saddam Iraq," *The Brookings Institution*, December 21, 2007, http://www.brookings.edu/saban/iraq-index.aspx.

[44] Thiel's study of the late 2007-2008 period showed a decline in SIGACT as US troops began to withdraw again in 2008 – see Joshua Thiel, "The Statistical Irrelevance of American SIGACT Data: Iraqi Surge Analysis Reveals Reality," *Small Wars Journal* (April 2011): p. 4.

month in August 2004 to 300 per month by August 2006, a sixteen fold increase.[45] According to Gen. McChrystal, such tempo produced decisive effects and created a very difficult challenge for the insurgency focused on regenerating its network.[46] The strategic effect of the Special Forces operations was also multiplied by integrating these efforts with those of the conventional forces that fought on the ground. It should be pointed out that this synergy was accomplished in late 2005 and 2006,[47] and therefore the impact of these developments would have started to be felt around late 2006, well before the surge took place.

The improved effectiveness was not limited to Special Forces. Conventional troops stationed throughout the country adapted as well. What is particularly important is that troops in Anbar and Ninewa, two of the most violent provinces in 2004-05, innovated first. These units, without any guidance from higher headquarters or doctrinal support, developed procedures and organizational capacities for full-spectrum operations almost one year before the surge and even before FM 3-24, *Counterinsurgency* was released in Dec 2006.[48]

This process is captured by James Russell in three case studies that provide important details not evident in high level data.[49] Russell focuses on the efforts of the 1st Battalion, 7th Marine Regiment (1-7) stationed in the western part of Anbar, the 1st Battalion, 37th Armored Regiment (1-37) in south-central Ramadi, and the 2nd Battalion, 1st Infantry Regiment (2-1) in Eastern Mosul. The period covered in these deployments spans from September 2005 to March 2007. In all instances, the areas covered by these units were previously largely controlled by Al-Qaida and local Sunni insurgent groups.

The organizational innovations of the three battalions included ramping up intelligence capabilities and undergoing training informed by the gang warfare

[45] "Generation Kill: A Conversation with Stanley McChrystal," *Foreign Affairs* (March/April, 2013). We realize that this statistic might be only the tip of the iceberg, however, given the fact that TF714 operations were and are still classified, additional data might be hard to acquire.
[46] Ibid.
[47] Ibid.
[48] The interim manual FMI 3-07.22 Counterinsurgency Operations, although in existence since October 2004, focused mostly on kinetic operations and provided no guidance for 'joint' operations – see discussion in David Ucko, *New Counterinsurgency Era* (Washington, D.C.: Georgetown University Press, 2009), pp. 65-80.
[49] James Russell, "Innovation in War: Counterinsurgency Operations in Anbar and Ninewa Provinces, Iraq, 2005-2006," *The Journal of Strategic Studies* 33, no. 4 (August 2010): pp. 595-624.

experience of US police departments. Technical and tactical improvements, such as data gathering operations (akin to area-wide census) and sophisticated surveillance equipment linked to advanced databases resulted in dramatically improved situational awareness. Most importantly, the battalions undertook full-spectrum operations. For example, the 1-7 engaged in reconstruction in the towns, while the 2-1 structured its operations alongside the lines of security, governance, economic development, and information operations. The latter even wrote its own campaign plan, which is an activity normally reserved for higher headquarters. A critical component of the effort to improve security was building the capabilities of the ISF. The 1-7 actively assisted in recruitment for the ISF by creating a series of new police stations and a 1,400-strong police force in their area of responsibility. The 2-1 introduced tactical combat advisory teams and a small-unit training program to two Iraqi battalions. Iraqi troops were also successfully deployed with US intelligence units. It is important to point out that these innovations were yet to be enshrined in doctrine and became the standard that was adopted during the surge. In a telling example of how the 2006 advances later became the norm, the Combat Outpost (COP) TTPs developed by 1-37 were sent to Gen. Petraeus and became the building block of the so called "COP in a Box" instructions distributed to all US units in Iraq in 2007.

By the summer of 2006, the security situation in Western Anbar had improved markedly –SIGACTs diminished from over 80 per month in December 2005 to less than 40 in July 2006, while the insurgent's dominance in south-central Ramadi was essentially eliminated by the end of September 2006. Only in the case of the 2-1, SIGACTs increased during their deployment. Even that, however, obscured an improved security situation since the disruption of insurgent bomb-making cells eroded the lethality of their bombs and brought down the casualty levels. In other words, behind the seeming escalation of violence, the rising number of SIGACTs in Iraq masked a severely weakened insurgency by the fall of 2006 and a change in the security momentum that helped drive the rise of SOI through the rest of the year and into 2007.

Increasing Iraqi Security Forces Strength

As coalition strength declined in 2006, it was counterbalanced by the Iraqi Security Forces (ISF) who attempted to fill the vacuum. Therefore, the problem we see in correlating troop levels to security is that usually only coalition or US troop levels (as examined by Thiel) are considered. In fact, security forces are defined in *FM 3-24* as including the host nation's army and police.[50] In 2003-04, coalition forces were mainly responsible for maintaining security and fighting the insurgency. However, under Gen. Casey's strategy of building up the ISF to ensure security, especially since mid-2005, it grew in significance (Figure 5) and should not be excluded from the analysis.

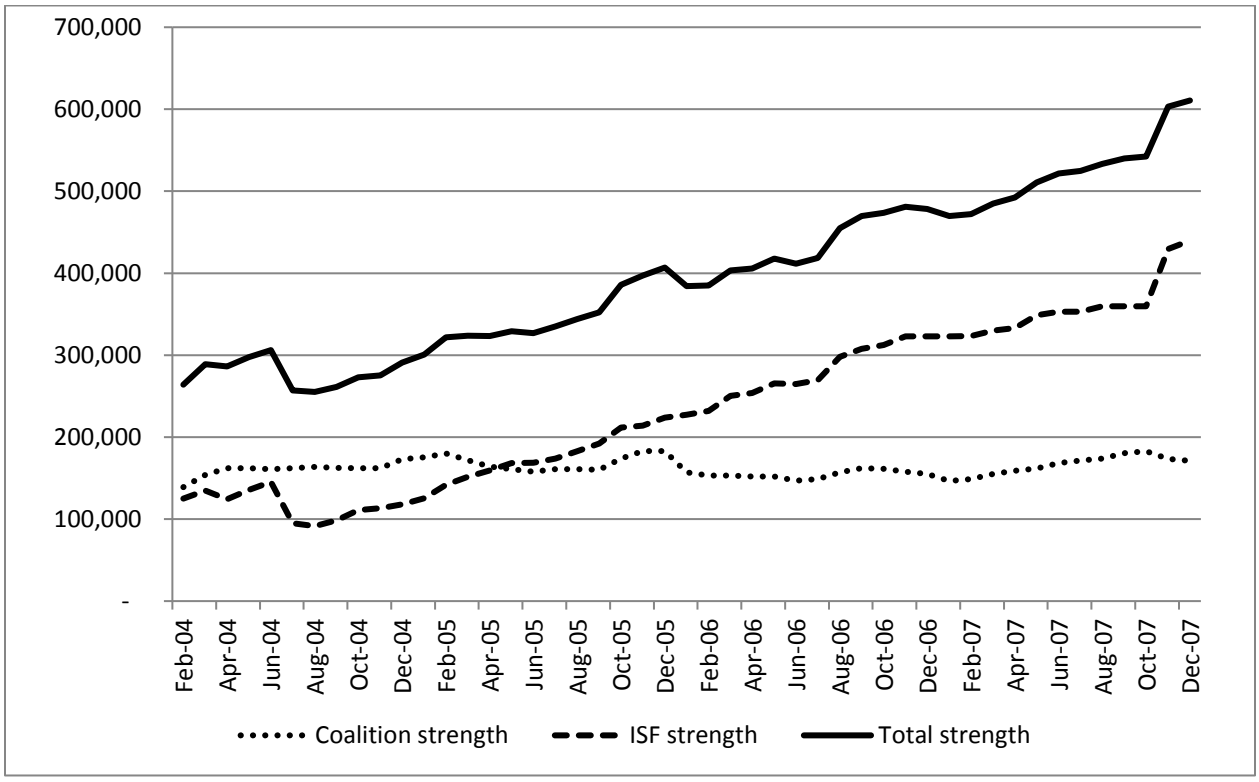

Figure 5: Coalition and ISF security forces, February 2004-December 2008

[50] US Army (2006), FM 3-24, *Counterinsurgency*, 1-13; and US Army (2014), FM 3-24, *Insurgencies and Countering Insurgencies*, 13-1.

By January 2006, ISF had outnumbered coalition forces and by September-October 2006, the size of the former was almost double that of the latter (161,000:312,000). In the period January-September 2006, ISF grew by 38 percent, that on top of the 78 percent growth in 2005.[51] Combined, this raised the total security forces markedly in the first nine months of 2006, despite the coalition drawdown, from 384,300 to 469,800 troops.

Arguably, such troop levels may have reached a threshold ratio of troop density, known as the COIN ratio, which is considered sufficient to make a difference in security on the ground. Several such ratios have been proposed as the golden standard in COIN campaigns – varying between 13 and 20 security forces to 1,000 inhabitants[52] While troop density ratio has not been decisively correlated with improved security, it is usually considered for planning purposes.[53] In our opinion, it might be impossible to establish a generally acceptable ratio, because each COIN situation is unique and therefore requires a different threshold. In the case of Iraq, the COIN ratio of 13 was surpassed in October 2005 and had grown to 16.9 by October 2006.[54] In other words, for a full year preceding the fall of 2006, overall troop density in Iraq had been at levels that

[51] The actual number of ISF personnel available for active duty, fully trained, and at a level that can participate independently in a COIN campaign has often been questioned–see Anthony Cordesman, "Iraqi Force Development: A Progress Report," *Center for Strategic and International Studies* (August 23, 2007): pp. 39-40). The numbers quoted here are for operational troops, i.e., levels I, II, and III–see "Iraq Index," December 2007, p. 31. The methods of assessment were also questioned—see for example GAO, "Stabilizing Iraq: Factors Impeding the Development of Capable Iraqi Security Forces," p. 13.

[52] Current NATO and US doctrine maintain a minimum ratio of 20:1,000 – United States Army FM 3-24, *Counterinsurgency* (Washington, D.C., 2006); NATO 3.4.4 (Draft), *Allied Joint Publication for Counterinsurgency* (COIN) (November 2008)), while some academic studies suggest figures around 13:1,000 (John J. McGrath "Boots on the Ground: Troop Density in Contingency Operations," Global War on Terrorism Occasional Paper 16 (Fort Leavenworth, KS: Combat Studies Institute Press, 2006); Seth G. Jones, Jeremy M. Wilson, Andrew Rathmell, and K. Jack Riley, "Establishing Law and Order after Conflict," *RAND Corporation monograph series* (Santa Monica, CA, 2005). It should be acknowledged that McGrath considers only the army in his ratio (which probably explains why it is the lowest).

[53] Jeffrey A. Friedman, for example, did not find any empirical support for these ratios, see Jeffrey A. Friedman, "Manpower and Counterinsurgency: Empirical Foundations for Theory and Doctrine," *Security Studies* 20, no. 4 (December 2011): pp. 556-591.

[54] ISF data by "Iraq Index," December 2007, 31. COIN ration is calculated based on an estimate of Iraqi population of 26.6 million in 2004, 27.4 in 2006, 28 in 2007 and 28.8 in 2008 – see Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2012 Revision (http://esa.un.org/unpd/wpp/index.htm).

historically have succeeded in other COIN operations. Thus, it is reasonable to assume that the COIN ratio in Iraq could have positively impacted security on the ground sooner than later.[55] If we accept that a change of momentum in the security situation had taken place around the fall of 2006, then the threshold COIN ratio that seems to have worked for Iraq lies between 15 and 16:1,000.

Despite the trend of increasing levels of violence during the period of the coalition troops' reduction in 2006, it can be argued that this might have pushed/motivated ISF to assume a greater degree of responsibility for the security situation. Indeed, the Iraqi Army since early 2005 had been given the mission of conducting counterinsurgency operations countrywide and responded by increasing their combat capabilities and readiness levels throughout 2006.[56] In contrast to the trend reported earlier regarding the decrease in US patrols in Baghdad, ISF patrols had actually increased – from around 300 per day in June 2005 to 550 in July of 2006. By the latter date, the ISF controlled all 6,000 check points in the city.[57]

Table 5 shows the operational readiness of the ISF (both Army and Police) from the middle of 2005 until the beginning of 2007. Notwithstanding controversies regarding how these levels of readiness were assessed, the weighted unit readiness score indicates clear progress.[58] Especially relevant here is the significant correlation ($r = -0.77$) between increased readiness and the decline of ISF casualties despite the increase in violence in 2006 and the overall high casualty figures throughout the year.

Table 5: ISF units (both Army and Police forces) operational readiness levels and casualties (deaths), June 2005-January 2007[59]

[55] It should be acknowledged that the troop density ratio continued to grow throughout 2007 and 2008 ("Iraq Index," December 2007), which likely helped solidify the security gains.
[56] US Government Accountability Office (GAO), "Stabilizing Iraq: Factors Impeding the Development of Capable Iraqi Security Forces," Testimony Before the House Armed Services Committee, Subcommittee on Oversight and Investigations, Statement of Joseph A. Christoff, Director International Affairs and Trade (March 13, 2007), p. 10.
[57] Filkins, "Baghdad's Chaos Undercuts Tack Pursued by U.S."
[58] Both the 'Weighted Unit Readiness' and 'Casualties' improved significantly with time ($p < 0.001$ for both rates of change).
[59] For unit readiness data see George W. Casey, Jr., *Strategic Reflections: Operation Iraqi Freedom July 2004–February 2007* (Washington DC: Military Bookshop, 2012), pp. 190-91. Readiness levels are defined as:

Month	No. Units Readiness (level I)	No. Units Readiness (level II)	No. Units Readiness (level III)	Weighted Unit Readiness	Casualties
Jun-05	1	25	68	20.2	296
Jul-05	3	14	74	18.5	304
Aug-05	2	33	81	25.5	282
Sep-05	1	37	78	25.8	233
Oct-05	1	38	81	26.7	215
Nov-05	1	43	84	28.8	176
Dec-05	1	52	75	30.3	193
Jan-06	1	62	67	32.3	189
Feb-06	0	67	71	34.2	158
Mar-06	2	70	62	34.7	191
Apr-06	5	70	65	36.7	201
May-06	5	68	66	36.2	150
Jun-06	5	79	58	38.5	132
Jul-06	8	78	56	39.3	217

capable of planning, executing, and sustaining counterinsurgency operations independent of Coalition forces (Level I); capable of planning, executing, and sustaining counterinsurgency operations with Coalition enablers (Level II); and capable of conducting counterinsurgency operations only when operating alongside Coalition units (Level III) – see US DOD, *Measuring Stability and Security in Iraq* (February 2006), p. 13.

Aug-06	8	83	50	40.0	233
Sep-06	8	90	43	41.2	150
Oct-06	9	86	45	40.7	224
Nov-06	13	90	41	43.3	123
Dec-06	12	89	44	43.0	123
Jan-07	12	88	46	43.0	91

Note: The 'Weighted Unit Readiness' is calculated as the sum of {3 x No. Units (level I) + 3 x No. Units (level II) +3 x No. Units (level III)} divided by 6.

In addition to the overall troop and readiness levels, there is compelling evidence that ISF units, and especially police forces, had an early impact in Anbar where the earliest occurrences of peak SIGACTs had taken place. Dozens of police stations were established that helped reduce the requirement for coalition forces in the region. From a 4,000 strong Marine contingent in September 2004 in Fallujah with no Iraqi police forces, by May 2006 security was transferred to 1,200 Iraqi police with only 300 Marines remaining.[60] In Western Anbar, joint ISF-Marine patrols gathered most of the intelligence by March 2006.[61] The September-October offensive into Ramadi was reportedly carried out with the help of several effective Iraqi army units.[62] A December 14, 2006 report by the outgoing commander of Multi-National Corps-Iraq (MNC-I), the tactical headquarters, despite expressing numerous concerns and frustration of Iraqi leadership's weaknesses, pointed out that "the Iraqi army was proving adept at holding areas, and the Iraqis were getting better at coordinating army, national police, and local police operations through a joint command center that they had established."[63] General Casey was even persuaded that ISF was capable of assuming command of the mission

[60] John Koopman, "Putting an Iraqi Face on the Fight," *San Francisco Chronicle*, May 21, 2006.
[61] John Koopman, "Marines Helping to Line up Sunnis for Iraq's Army," *San Francisco Chronicle,* March 27, 2006.
[62] Michael R. Gordon and Bernard E. Trainor, *The Endgame: The Inside Story of the Struggle for Iraq, from George W. Bush to Barack Obama* (New York: Pantheon Books, 2012), p. 254.
[63] Casey, "Strategic Reflections," p. 131.

for securing the capital.[64] In other words, in spite of the criticism at the time about the level of ISF effectiveness in 2006, it appears that Iraqi forces, nevertheless, made a significant difference on the ground. It is also important that security was enforced by locals enrolled in the ISF, thus being from the same sectarian background as the general population in the area.

Pre-SOI Tribal Unrest

Another trend we would like to highlight as a possible important contributor to security improvement involved the earlier instances of "awakening"-like movements in Anbar province in 2006. It is well documented that many Sunni tribes were alienated by al-Qaida as early as 2004 and consequently initiated several attempts to rally against al-Qaida while seeking cooperation with coalition forces. These earlier movements included the Albu Nimr tribe in early 2004, the Albu Mahal tribe and its Hamza Brigade in the spring of 2005, the Desert Protectors militia in the fall of 2005, and finally the "Anbar People's Council" formed by the Fahad tribe in 2006.[65] It has also been pointed out that some of these earlier uprisings had much larger popular support (tribal affiliation) than the tribe that catalyzed the late 2006 Awakening, but they still failed in the face of al-Qaida's brutality and inability of coalition troops to provide protection for their elders.[66]

In our opinion, these failures should not be viewed in isolation. First, there is a clear connection between them – for example, the defeated Albu Nimr tribe in 2004 contributed to the formation of the Hamza Brigade in the middle of 2005. The "Desert Protectors" militia grew from the remnants of the Hamza Brigade while the Albu Mahal tribe, which was the original founder of the Brigade, used the coalition retaking of al-Qaim in late 2005 to be reinstated in control of the town.[67] In other words, despite the

[64] Ibid.
[65] S. Biddle, J. Friedman, and J. Shapiro, "Testing the Surge: Why Did Violence Decline in Iraq in 2007?" *International Security* 37, 1 (2012): pp. 18-21.
[66] Ibid., pp. 19-20.
[67] Russell, "Innovation in War," p. 598.

earlier setbacks, none of these tribes aborted the effort to achieve their goals and clearly continued to work alongside coalition troops to accomplish that end.

It can be argued that each tribal movement that arose in 2004-05 contributed to a steady trend of former insurgents being removed from the battlefield, even though they may have not succeeded in their goal of expelling al-Qaida from their territory. After their defeat, the former insurgents mostly did not revert back to align with al-Qaida and attack coalition troops again, but instead reengaged in contributing to security by joining ISF police or army units. For example, by the spring of 2006, most of the Albu Mihal's militia in al-Qaim had been enrolled in the police forces.[68] Therefore, we can conclude that the growth of Sunni insurgents rising against al-Qaida continued into 2006, but that trend was obscured by the growth of ISF where most former insurgents went. Those that did not meet the Interior Ministry's literacy requirements were established as Emergency Response Units (ERU), but still being paid by that Ministry. By December of 2006, more than 2,200 men, who have already been operating alongside the police for some time, were enrolled in the ERUs.[69] It is difficult to quantify the movement of Sunni tribal militia into the police prior to SOI, but it is highly likely to have been in the tens of thousands, thus not much dissimilar to the SOI in 2007 whose number reached 100,000. For example, in the Baghdad neighbourhood of Dora alone, the force raised to fight al-Qaida in 2006 is quoted at 6,000.[70]

What distinguished this period and the 2007 tribal uprising was that instead of being folded into the ISF, the new tribal militias were given a separate status and paid not through the Iraqi budget as were the ISF, but directly by the US, which gave them higher visibility and prestige. Therefore, the Anbar Awakening in October 2006 is simply an artificial demarcation of a long trend that previously saw disgruntled and violence-fatigued Sunni insurgents and tribesmen enroll in the ISF where they received a salary and stood up as separate units in the post-2006 period. It appears that the comprehensive US assistance and cover provided to the new militias was almost a coincidence – taken as a result of a self-initiated report by a field analyst to the

[68] John Koopman, "Marines Helping to Line up Sunnis for Iraq's Army," and Russell, "Innovation in War," p. 602.
[69] Gordon and Trainor, *The Endgame*, p. 253.
[70] "Fight or Flight," p. 21.

commander.[71] Once the SOI militias became funded and directly equipped, Sunni tribal members were more inclined to join them than the ISF, which had the stigma of association with a Shia-led government. All of a sudden, Sunni tribesmen formed militias with US support, which attracted media attention – and the myth of the Awakening was born.

In retrospect, the SOI phenomenon was not born in isolation from the previous tribal movements. Instead, the SOI standups should be regarded as a phase of an evolutionary transformation. What gave it visibility and publicity was the different organizational structure (paramilitary) and form of support (direct funding). These new elements made it look like a new phenomenon, although it was not.

The sectarian war

Lastly, we would like to point out that after the bombing of the Samara mosque in February 2006, the latter part of that year is known as a period of escalating sectarian violence and increased Shia militia activities. Steven Biddle concluded that the war in Iraq in 2006 was a communal civil war rather than a war against occupying forces.[72] In fact, it appears that the sectarian violence can be credited for driving most of the increase in SIGACT during this period. The bombing of the Samarra mosque clearly marks the onset of the sharpest escalation of violence (Figure 6).

[71] See Ben Connable, Walter L. Perry, Abby Doll, Natasha Lander, Dan Madden, *Modeling, Simulation, and Operations Analysis in Afghanistan and Iraq: Operational Vignettes, Lessons Learned, and a Survey of Selected Effort*, *RAND Corporation research report series* (Santa Monica, 2014), pp. 75-76. In fact, the objective of the report was to determine whether investment in SOI would prove to be more cost effective than that in anti-IED technologies and no considerations were initially given to the impact of SOI on the overall security environment.

[72] Stephen Biddle, "Seeing Baghdad, Thinking Saigon," *Foreign Affairs* (March/April 2006).

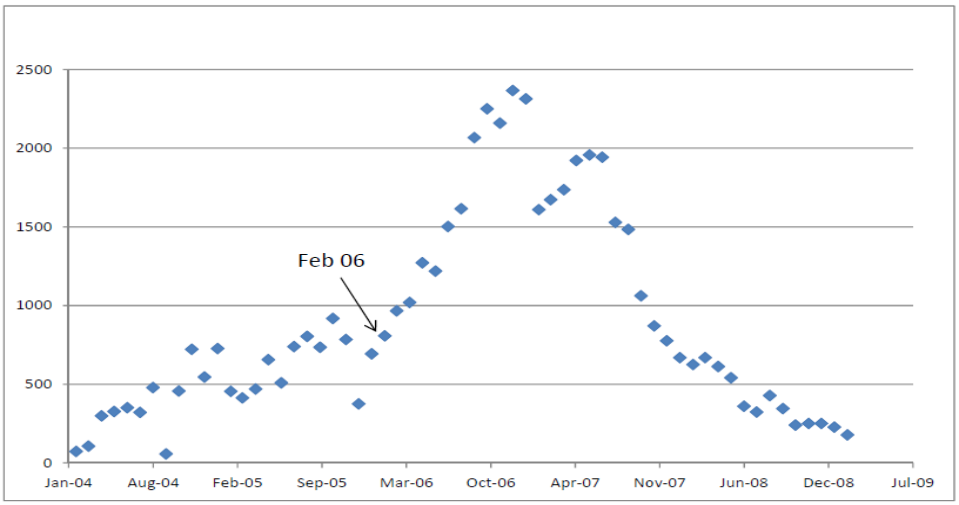

Figure 6: Sum of monthly SIGACT across all 38 AOs from Feb 2004 to Feb 2009

It is not our intention here to discuss the sectarian violence in detail, nor are we arguing that violence crested as a result of the completion of the cleansing process. What we would like to emphasize is that the Shia militia clearly had the upper hand and the Sunnis were losing the battle for political dominance.[73] From the Sunni perspective, it looked like they were locked in a three-front battle – with al-Qaida, coalition forces, and the Shia militia. It is reasonable to assume that the escalation of sectarian conflict in early 2006 and the seeming superiority of Shia militias had probably convinced the Sunni population that the only way out their predicament was to align with coalition forces (already precedented in the conflict against al-Qaida). This realization most likely also contributed to the changing momentum in the security situation that occurred prior to the surge. In the words of Gen. McChrystal, by the time the surge was announced, "Iraqis had experienced nearly four years of violence and uncertainty and were, by and large, exhausted."[74]

[73] Already in the beginning of 2006, Sunni insurgent leaders admitted that they felt defeated by the Shia militias – see Bowman, "As the Iraq War Ends, Reassessing the U.S. Surge."
[74] General Stanley McChrystal, *My Share of the Task: A Memoir* (New York: Portfolio/Penguin Group (USA) Inc., 2013), p. 250.

Conclusion

Based on our analysis that the pre- and post-SOI slopes of SIGACT do not differ for up to and including 8 months of SOI standup, we conclude that the standups were essentially inconsequential to the evolution of SIGACTs. Instead, it is plausible that the decline in violence likely facilitated the SOI standups. Similarly, the instances of peak SIGACT, which had mostly occurred prior to the surge, indicate that the latter was not the primary cause for the decline in violence in Iraq. The effectiveness of the population-centric COIN theory that was mandated in 2007 is also in doubt, since the new strategy was implemented after 68 percent of the AOs had already experienced peak violence, and it is mostly a theatre-wide reinforcement of certain previous advancements on the ground. In practice, what made a difference was the tactical improvements in situational awareness, which indeed brought US troops closer to the population, but which can hardly be designated as a "winning hearts and minds" approach. On the other hand, the conclusion that the synergy of the surge and SOI standups contributed to a faster decline in violence is difficult to support because the difference between the post- vs. pre-SOI standup slopes of SIGACTs is not statistically significant. The synergy between the surge and SOI standups seems to have been less about military capability (support/protection from al-Qaida) and more about financial support (providing livelihood to the militia members) and a desire to prevent a full-scale defeat.

Overlooked is the genesis of the decline in violence, which mostly took place before either the surge or SOI standups began. As pointed out earlier, the SOI standups markedly lagged the occurrence of peak and median SIGACTs by an average of 6.5 and 8.3 months respectively. Thus, the real breakthrough occurred in the period before the end of 2006 (several months before the surge and SOI standups peaked). Among the most important transformational trends in 2006 highlighted in this paper are the significant increase in Special Forces operational tempo coupled with ISF growth and development in combat capability. In other words, Gen. Casey's strategy of building the strength of ISF had started to pay security dividends in late 2006, but these only became visible several months later in 2007. Another largely under-appreciated process were the Sunni tribes' standups, which during 2006 tended to be absorbed by the ISF and were, therefore, not as transparent as in 2007. It was only the decision to support them

financially that helped promulgate the standups as a widely-dispersed phenomenon thereafter as standalone SOI militias. It can be argued that the lag of peak and median SIGACTs to the SOI standups in 2007 might have been a product of these developments. It is difficult to give weight to these trends or to establish which was more prominent, but they all likely contributed to a shift in the momentum of the security situation by the end of 2006.

As a whole, these interwoven transformational trends in 2006 were obscured by the violence and fog of war to most analysts including military planners and the US National Security Council at the time. Thus, it is understandable why decisions to help the Iraqi government with a surge of US troops in 2007 until the ISF strengthened further were painfully difficult to make. As events turned out, however, our analysis suggests that the surge was an unnecessary gambit.

In closing, we would also argue that the conditions for defeating the Iraqi insurgency in 2006-2007 might not be easily replicated in the case of the current anti-Islamic State campaign. The decision to support standalone militias in the period after October 2006 solidified the security gains. However, the institutionalization of these militias and the failure to integrate them fully into the ISF is a major destabilizing factor in a sectarian environment, which continues to contribute significantly to the contemporary violence in Iraq.