The Hamlet Evaluation System - Reevaluated

*A GIS application to Civil-Military Operations in the Vietnam War*

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**Abstract**

*The Hamlet Evaluation System (including its precursor HAMLA) was an attempt to quantify the pacification campaign in the US-Vietnam War. In a "war without fronts" the need for quantitative metrics to measure success was paramount. Yet much of the historiography suggests that HES and other statistical survey techniques were not fully embraced. Crude efficiency measures such as body count and kill-death ratios are often described as the focus of commanders attempts to measure the war. If this is the case, why were more sophisticated systems such as the HES being ignored? Was the issue one of the data collection itself or a failure to analyze the data in light of the war’s strategic aims? This analysis seeks to answer the above questions by applying modern data analytic and GIS techniques to understand, model, and communicate the data collected in the HES.*

1. **Introduction**

In popular memory, the Vietnam War is the war where everything went wrong. The consistent themes of most American depictions of the war (*Platoon, Apocalypse Now,* and even the parody *Tropic Thunder*) are brutality, senselessness, and a descent into madness. In no small part this cultural account has been reinforced by the vast majority of Vietnam historiography written by both professional military officers and military historians that criticize the conduct of the war at every level. These critiques broadly fall into two camps of revisionist.[[1]](#footnote-1) First, the “conservative counterfactual” revisionist argue that the Army could have won the war if “its hands weren’t tied behind their back."[[2]](#footnote-2) And, second, ”counter-insurgency experts” claim that the War would have been winnable if the Army had adopted a strategy that focused on winning over the support of the local population.[[3]](#footnote-3)

Perhaps the only thing that both sides of this debate agree on is a universal disdain for the “statistical metrics” that dominated and supposedly misguided commander’s assessment of the war. A prime example of this the account of John Prados in *The Columbia History of the Vietnam*, where he writes. “Perhaps the worst impact of attrition as the U.S. strategy in the Vietnam War was that it substituted statistical measures for visible goals.”[[4]](#footnote-4) This claim seems bizarrely out of touch, given the well-known debate on whether the U.S. did pursue a strategy of attrition and the obvious fact that the most devastating impact of such a strategy would be the massive loss of life involved. Moreover, this critique seems to ignore the problem that gave rise to these metrics in the first place. How are commanders supposed to know whether they are making progress toward their strategic goals?

This historical question has significant implications for modern military operations. John Nagl, one of the most prominent of the counter-insurgency experts, inspired a generation of post-Cold-War Army officers that Vietnam style quagmires are in fact “winnable” if only the military employs the right tactics and keeps strategy focused on the population. The implications of this notion became clear in the Global War on Terror when the US military again found itself as engaged prolonged struggled against an ideological enemy. Nagl himself served on General David Petraeus’s Counterinsurgency think-tank that sought to devise a new set of tactics to find success in the Iraq War.[[5]](#footnote-5) Ironically, whether the Petraeus’s “Surge” strategy was successful is another debate that hinges entirely on how one measures success in population-centric warfare.

More recent scholarship on the Vietnam War has been more sympathetic to the efforts of American commanders to lead a complex war, while acknowledge that in truth the war was likely never ours to win or lose. Proponents of this school of analysis suggest the multitude of quantitative measures developed over the course of the war should be viewed as evidence of the serious attempts U.S. military leaders made to understand and assess the various factors that make up counterinsurgency campaign. As Gregory Daddis, a prominent member of this school of thought, writes in *Westmoreland’s War*, “A sound strategy alone does not guarantee success, just as one general cannot control all the forces at play in a time of war.” [[6]](#footnote-6) Thus, rather ignoring efforts to model a war without fronts, scholarship should require a serious study of the methods that the Military Assistance Command Vietnam (MACV) employed.

Though this synthetic evaluation of the war has been acknowledged as a growing consensus among military historians, a quantitative study of the MACV’s metrics has yet to be completed. There are several studies of the “pacification” campaign to secure South Vietnam from Communist insurgents, including an early work by Daddis specifically on metrics for success and progress. In that work, Daddis writes, “How well MACV thought evaluation tools such as HES [the Hamlet Evaluation System] helped asses overall progress during the war is crucial to understanding the relationship between pacification programs and the American strategy.”[[7]](#footnote-7) If this is the case, than grappling with quantitative metrics on their own terms will certainly help illuminate new details of interest for historians. Considering the advances made in GIS technology since the late ‘60s, such an analysis stands a chance of finding the illusive “front-line.”

In addition to historical interest and scholarship, the viability of a data-based approach to human-centric warfare is a critical question to the modern military as the armed forces are increasingly called to compete and influence below the threshold of conventional conflict. These types of "gray-zone" and "hybrid" conflicts will inherently be "wars without fronts" in the sense of a geographic line of control. Without falling for the logic trap that sound tactics and strategy will grant the U.S. military complete control of conflicts, trying to understand the problems of the US Army's previous attempts to model abstract conflict is of vital importance to the modern military. Thus, quantitatively analyzing historical US Army’s attempt at data-based warfare is essential not only to understanding that history, but also to evaluating current attempts at the same goal.

This study aims to explore this question and serve as a preliminary analysis for more technically advanced technique. Since no one has approached the data using modern analytic techniques, there is fruitful ground for further studies that aim at the question above.

*Was the US-Army successful in designing a data-based counterinsurgency campaign in Vietnam despite losing the larger conflict?*

1. **Data Source**

The Hamlet Evaluation System, as mentioned before, was chief among a suite of metrics designed to evaluate to progress towards securing South Vietnam for local and foreign insurgent forces. As quoted in Daddis’s text, a senior official associated with the project explained, “HES is primarily concerned with evaluating, measuring and reporting progress of the [Government of Vietnam] towards the goal of restoring and maintaining security and government control.”[[8]](#footnote-8) Between 1967 and 1974 military advisors tracked the progress of 12,650 Hamlets across South Vietnam monthly. This amounts to 1,062,600 observations in the whole dataset. The observations are broken into a fixed set of variables (asked monthly) and a periodic set (asked bimonthly or quarterly) which are stored in separate files. This means there are 36 separate raw txt files which store the various attributes over time. The National Archive provides a number of technical Chart

Description automatically generateddocuments which provide clarification on the specific encoding of each of the variables. [[9]](#footnote-9)

Specifically, this preliminary analysis focuses on HAMLA, the initial data-collection and pacification scoring system designed by the US Army in conjunction with CORDS and the CIA. HAMLA was the first quantitative metric designed to measure progress in winning hearts and minds of South Vietnam, as was comparatively simpler than the successive generations of the HES that followed. The HAMLA scoring system began in January 1967 and ran through 1969, when it was gradually replaced by the HES70 generation of metrics. As noted, the specific variables changed slightly over time, but at a minimum each of the observations includes a date, location (recorded in MGRS), hamlet population, and political/military control, measured between the Viet Cong (VC) and Government of Vietnam (GVN). HAMLA, additionally provides a development score which combine the other variables measured onto a 0 to 500 scale. This served as a basis for my analysis of the economic and societal reconstruction projects which we leveraged to win the population over from insurgent influence.

The data was already recorded in a tabular format (see example/data folder) but required significant preprocessing to get it into a useable, modern format. For data-processing, I adopted a Tidy-verse framework and used R to combine the archival files into a combined table with all hamlet-level observations (hamlet-month) as rows and the attributes assigned to column vectors. Unfortunately, the archival files unfortunately did not have a full MGRS grids (each of which must contain a Grid Zone Designator, Grid Square ID, and precision level X-Y coordinate); reconstructing the missing components proved to be one of the most challenging aspects of the data processing. To assign the missing GZDs I cross-referenced a free Web API which visualizes MGRS reference squares and designators.[[10]](#footnote-10) The original data files, processed data files and corresponding processing script files can be found on the GitHub associated with this project.[[11]](#footnote-11)

One of the most important methodological questions with this data, is accuracy and validity. Anecdotal evidence typically casts doubt on all metrics used in Vietnam, and the HES is no exemption. While processing the HAMLA, data I encountered two significant issues within the data:

**1. Inconsistency of Hamlet Locations**

Many of the hamlets are inconsistently recorded both temporally (not observed ever single month) and spatially (observations of the same hamlet may have different locations recorded). This poses a significant challenge to analyst who want to conduct granular studies of specific moments and places in the war.

**2. HES format transfer (September 1969)**

Do you remember? In September 1969, a new HES system for collecting pacification data was devised and implemented in IV Corps (the southern delta region). The new system was called HES70/71 and collected more demographic and societal data than the original HAMLA. Data processing and cleaning of those files is forthcoming and may be able to provide the ability to analyze (or at the least visualize) the pacification campaign across the changing metrics.

Ultimately, the first issue was addressed using spatial statistics and kernel density estimation to aggregate across larger portions of the terrain. The second was not fully addressed (pending processing of the HES70/71 files), but to limit the effects of discontinuities for the temporal aggregation I ended the analysis at the end of 1968, the final date that included each of the Corps Tactical Zones (CTZ).

1. **Approach & Methodology**

Chart

Description automatically generatedThough more elaborate models can be constructed on the dataset, the aim of this project is simply to map the lines of control as recorded in the HAMLA and attempt to validate the accuracy. Since the data was recorded with MGRS locations, geocoding, the process of turning tabular data to spatial data, proved to be trivial using the ArcGIS tool suite following the data preprocessing. Once the data had been processed into a point feature class (where each hamlet observation was assigned a point), I assigned the data attribute allowing time-based viewing of the data. Additionally all hamlet observations were scaled by population and colored by their classification rating. These classes run from A-E for Government of Vietnam (GVN) held hamlets and are assigned a rating V if held by the Viet Cong (VC).[[12]](#footnote-12)

A survey of the temporal map revealed the spread of the VC held hamlets to oscillate heavily in some regions and to remain static in others. This variance lends itself well to spatial statistical methods, including Optimized Hot Spot Analysis (OHSA), which detects the statistical significance of frequencies detected within the data. When applied to a point feature class of only the VC held hamlets, this analysis proved effective. However, populated regions (such as the upper Mekong Delta) that had no VC held hamlets were not identified as “Cold Spots” but were simply ignored from the analysis. Thus OHSA could not reveal the innate structure of the conflict.[[13]](#footnote-13)

To gain a better understanding of GVN held territory kernel density analysis was applied to identify the geographic concentrations of highly “developed” hamlets. The development score, as discussed in the data introduction, was a derived attribute designed to capture the level of economic and political stability within a hamlet. One would expect such communities to cluster together, so kernel density estimation was an appropriate method. Moreover, OHSA does not excel at distinguishing between values of different types and would not allow us to determine the degree of GVN control as easily. The Development KDE raster was Map

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Map 1 – Temporal Analysis

Finally, once these maps were developed, I designed a final plot which displays the security and development analyses together. This allows the viewer to quickly identify areas of staunch GVN/US support and areas that predominantly held by the VC. Contentious territory reveals itself as area with a high expected development score and a high number of VC held hamlets. Indeed, this final analytic step reveals many of the most notorious battlefields of the early war and points out locations of particular violence during the Tet offensive.[[15]](#footnote-15)

1. **Results**

Reviewing the Temporal Map proves a highly effective way to visualize the pacification campaign and the competition for control over the peoples of South Vietnam. Combing the spatial dimension of the data with a temporal visualization makes it easy to see the ebb and flow as control oscillates between GVN and VC. Without significant analysis one can see that the GVN consistently retained control of the heart of the population centers (Saigon, Hue, and Da Nang) and many of the regional territorials were less consistently controlled by either side.

Viewing the data across time yields some other interesting trends. The Mekong Region appears the most static with neither side advancing significantly throughout the period. Northern highlands and coastal regions are the most dynamic; in the areas adjacent to Hue and Da-Nang we can observe operations to drive out the VC partially succeed (though leaving abandoned hamlets in their wake). Fascinatingly, as the advances occur we can see nearby VC held territories calcify, suggesting that the VC adapted and relocated away from the US/ARVN advances. This is a great indicator of the validity of the HAMLA data when aggregated at this level.

Moreover, another positive sign for the data’s ability to map the progress of the war, is that during the period associated with the Tet Offensive (January-March 1968) we can see an increase in VC held territory in and around areas where the fighting was most intense. This is especially true for the hamlets adjacent to Hue and Saigon both of which faced significant assaults from VC and North Vietnamese regulars during the offensive. From a predictive standpoint, these periods are also significant because less “developed” hamlets are not always the ones that fall during a VC advance, and instead much of it appears to be geographically based rather than Map

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Map 4 – Security Development Comparison

The aggregating methods were also particularly effective in revealing the competition between VC and GVN forces. Optimized Hot Spot Analysis detected areas that were highly associated with VC insurgent activity and places that remained largely in VC hands throughout the period studied. Despite of slight bias towards highly populated areas, the OHSA identified many of the country/rural areas as centers of consistent VC control. Likewise, Kernel Density Estimation applied to data revealed the areas with highest GVN support. We can see that the Upper Delta Region which maintained almost no VC held hamlets throughout the period is consolidated in development scores as time goes on. In conjunction, these techniques prove a powerful way to detect complex zones of control between two competing powers.

The most interesting regions, such as the Tan-An district to the southwest of Saigon, are those with high levels of GVN development and high occurrence of VC held hamlets. This result maybe from the lack of granularity of the observations locations or that the analytic techniques were performed separately. However, it may also be revealing highly contentious areas that may swing either way. Importantly see that these potentially contentious regions are exclusively in well-populated urban areas or river lands with many high mobility corridors (canals and waterways). This suggests that the contentiousness of an area may in part be driven by its terrain as well as its demography.

1. **Conclusions & Future Work**

Though far from scientifically conclusive, this study has broadly shown that there is analytic potential and quantitative validity to the HES dataset. Moreover, applying kernel density estimation and geo-statistical methods may be able to reveal the illusive lines of control in a war without fronts. If this is the case, then just as the US Army may have had a sound strategy that ultimately failed, the data-based metrics may have been sound analytically but still not been enough to make a difference in a war that was fundamentally unwinnable by American forces.

Significant work still needs to be done in analyzing this dataset. The geostatistical methods used here are relatively naïve and fail to account for the oppositional nature of VC and GVN control. A more sophisticated raster technique could be used to delineate lines of control across one continuous variable. However, there may be some validity in soft assignment between the groups of GVN and VC control. A particularly promising line of research is to test the predictive capacity of the dataset, especially given the recent interest of the US military in Algorithmic Warfare, where Machine Learning may be applied to predict and anticipate tactical outcomes and maneuvers. If ML can accurately predict the transition of a hamlet from GVN to VC control, then there is significant promise in building data collection efforts such as the HES in future wars. More pessimistically, it would also suggest that successful databased strategy does not guarantee victory, as the robust data collection HES proved ultimately futile in ensuring the viability of the South Vietnamese state.

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2. Micahel Kort, *The Vietnam War Reexamined*, (Cambridge University Press, 2017). [↑](#footnote-ref-2)
3. John Nagl, *Learning to Eat Soup with a Knife: Lessons from Malaya and Vietnam* (The University of Chicago Press, 2005). [↑](#footnote-ref-3)
4. John Prados et al, “American Strategy in the Vietnam War,” *The Columbia History of the Vietnam War,* (Columbia University Press, 2011), 258. [↑](#footnote-ref-4)
5. Nagl’s current bio can be found at: <https://www.haverford.org/about-us/head-of-school-john-nagl> [↑](#footnote-ref-5)
6. Greggory A. Daddis, *Westmoreland’s War: Reassessing American Strategy in Vietnam*, (Oxford University Press, 2014), xxiv [↑](#footnote-ref-6)
7. Greggory A. Daddis, *No Sure Victory*: Measuring US Army Effectiveness and Progress in the Vietnam War, (Oxford University Press, 2011), 17. [↑](#footnote-ref-7)
8. Brigham, “Pacification Measures in Vietnam,” TTUVA, qtd in Daddis, *No Sure Victory*, 119. [↑](#footnote-ref-8)
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10. GISsurfer, Map with MGRS Coordinates, produced by MappingSupport.com. Accessed May 5th 2021.

    <https://mappingsupport.com/p2/coordinates-mgrs-gissurfer-maps.html> [↑](#footnote-ref-10)
11. John T McCormick, HES\_Reevaluated. (Source for data cleaning and processing, as well as copy of archival files.)

    <https://github.com/jtmccorm/HES_Reevaluated> [↑](#footnote-ref-11)
12. *Map 1. – HAMLA: Temporal Map*. <https://carnegiemellon.maps.arcgis.com/home/webmap/viewer.html?webmap=c78bc9beb02a458ebb9412b38acce50d> [↑](#footnote-ref-12)
13. *Map 2 – HAMLA: Security Analysis* [*https://carnegiemellon.maps.arcgis.com/home/webmap/viewer.html?webmap=9f7d97369c7b47b289627661450ef65c*](https://carnegiemellon.maps.arcgis.com/home/webmap/viewer.html?webmap=9f7d97369c7b47b289627661450ef65c) [↑](#footnote-ref-13)
14. *Map 3 – HAMLA: Development Analysis* [*https://carnegiemellon.maps.arcgis.com/home/webmap/viewer.html?webmap=e9b33c3921d14853ade1d4b6d130106c*](https://carnegiemellon.maps.arcgis.com/home/webmap/viewer.html?webmap=e9b33c3921d14853ade1d4b6d130106c) [↑](#footnote-ref-14)
15. *Map 4 – HAMLA: Security & Development Comparison* <https://carnegiemellon.maps.arcgis.com/home/webmap/viewer.html?webmap=909651326222424e92587e56686ab297> [↑](#footnote-ref-15)