

The Analysis of the Historical Effectiveness of Different Counterinsurgency Tactics and Strategies

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BACKGROUND

In 1990, Trevor N. Dupuy, using his combat model, the TNDM (Tactical Numerical Deterministic Model) made casualty predictions about the upcoming Gulf War, both in congressional testimony and in a book published just before the shooting started in Kuwait in 1991. His estimate was the lowest public estimate presented and, therefore, more accurate than the much higher estimates provided by the US defense community.

In 1995, *The Dupuy Institute* assembled an estimate of casualties for the Chairman of the Joint Staff before the US decided to deploy into Bosnia. This was the first systematic attempt we are aware of to provide a casualty estimate for what were then being called OOTW (Operations Other Than War). It was based upon a database of 90 peacekeeping operations, insurgencies and interventions that we had assembled. It was again an accurate prediction, and in this case, became part of the decision-making process.

In late 2004, *The Dupuy Institute* again assembled an estimate of casualties, duration and several other factors for the developing insurgency in Iraq. This was the first systematic attempt we are aware of to provide a casualty and duration estimate for an insurgency. This was based upon a database of 28 post-World War II insurgencies that we had assembled. It was again accurate in its predictions of casualties, duration, US force size, insurgent force size and other factors. As such, it stands today, four years later, without change.

COUNTERINSURGENCY TACTICS AND STRATEGY STUDY

This study was a direct consequence and partial continuation of the *Casualty Estimate for the Insurgency in Iraq* study done by *The Dupuy Institute* in 2004.¹ With a more extensive database of 83 insurgencies, interventions and peacekeeping operations, we have begun to systematically test the theories of various counterinsurgency experts. This effort includes an

¹ The Dupuy Institute. *Casualty Estimate for the Insurgency in Iraq — Draft*. Annandale, Virginia: The Dupuy Institute, 2005. This was presented as a series of briefings given between December 2004 and March 2005 and included an undistributed draft paper.

examination of the works of nine experts: Clutterbuck, Galula, Joes, Kitson, Fall, Manwaring, O'Neill, Trinquier and a 1984 BDM report.

As part of this study, we systematically examined the published works of these nine theorists and summarized their conclusions. We then compared the results of the analysis of our database to these theorists to see if the data supported or contradicted what they had hypothesized. In those areas where we were able to test their ideas (and there were some limitations there), we were only able to find support for only about half of what these theorists hypothesized, except for David Galula and Bernard Fall, for whom we found considerable support.

This effort included a broad range of findings based upon a statistically measurable and significant number of cases from our database of 83 post-World War II cases. The analysis of these issues and the data used in that analysis is included in a series of detailed appendices to the full report, or as separate referenced reports we have done, but are not included in this short summary of our work. Our findings addressed the following.

- Terrain.
- Rules of Engagement and Degrees of Brutality.
- Nature of Insurgencies.
- Force Ratios.
- Measurements of Burden.
- Operational Details—Active Sanctuaries, Border Controls, and Population Resettlement.
- Indigenous Government Type and Elections.
- Force Ratio versus Cause.

CONCLUSIONS

Our principal conclusion from this exercise is that Force Ratios and Insurgent Cause are extremely significant factors. We can build a model based upon only these two factors that will explain the outcome of 80% of the 83 cases we have examined. This is quantitative analysis of the largest and most detailed insurgency database of which we are aware. This does not mean we are convinced that this is entirely correct, but will argue that it has at least as much support as any other suggestion made, and more support than most. Still, it is clear that more work needs to be done.

In general, Galula and Fall provide the two theoretical constructs we have examined that we believe have a sound basis.

We also conclude from this analysis that:

1. There is a strong need for further study of these issues.
2. There is a considerable danger of negative learning.
3. There is not a strong basis for developing any model of insurgency before such further study is conducted.

4. There are sometimes limitations with developing theories based primarily upon personal experience.

THE BIG PICTURE

1. Force ratios, within reason, are not an issue when facing regional or factional insurgencies.
2. When facing insurgencies that have a broad base of support, one needs at least a 5-to-1 force ratio and preferably a 10-to-1 force ratio.
3. It appears that the two most important factors in determining the outcome of an insurgency are the force ratio and the nature of the cause of the insurgency.

OTHER FACTORS TESTED

A number of factors were tested in this effort and in our work for the Center for Army Analysis. A listing of the important ones, but of lesser importance than force ratio and cause of insurgency, are provided below. Once the two most important factors are address, then other lower order factors due come into play. The lower order factors include:

1. Rules of Engagement and Rectitude.
2. Terrain.
3. Burden.²

Factors that may be important are the Insurgent Strategy and the impact of local government types and elections.

Then there are those elements of an insurgency that so far have not shown to be that important. This does not mean that they are not important; it just means that their impact may be of a lower order in the overall picture than the issues discussed above. These include:

1. Structure of Insurgencies.
2. Specific Government Reforms.
3. Degree of Outside Support.
4. Sanctuary.

² Burden in this case refers to the cost of the war, measured as either a percent of losses compared to home population (what we label intensity), or a percent of forces committed compared to the home population (what we label commitment).

5. Barrier Systems.
6. Population Resettlement.
7. Government Type.
8. Staying the Course.

RECOMMENDATIONS

1. Future analysis should be focused to address one of three distinct time frames:
 - a. Before an insurgency starts (pre-insurgency).
 - b. The early stages of an insurgency (proto-insurgency).
 - c. An insurgency that has clearly developed (developed insurgency).

Currently, our work primarily addresses developed insurgencies.

2. The intelligence community needs three sets of quantitative predictive tools. These are not intended to replace current approaches but to supplement them. The three sets of tools are:
 - a. A model that predicts the chances of political violence across all nations. This is, in effect, readdressing the Gurr and Feierabend and Feierabend work and would be extended to address all the data that has accumulated in the 40 years since they did their analysis. This is not a small effort (pre-insurgency model).
 - b. A model or set of procedures that predicts the chances of and analyzes the nature of insurgencies in their early stages (proto-insurgency model).
 - c. A model or set of procedures that predicts the chances of and analyzes the nature of insurgencies that are clearly developing. This is effectively what our Iraq casualty estimate did in January 2005 (developed insurgency model).
3. Training tools need to be revamped to consider current understandings and to remove past biases.
 - a. The political concept, motivation and causes of insurgencies need to be seriously addressed.
 - b. The structure of the insurgency needs to be addressed. The current material appears to be overly influenced by the US experience in Vietnam.
 - c. The issue of outside support needs to be addressed. The current material appears to be overly influenced by the US experience in Vietnam.

4. Analysis needs somehow to be able to parse the study of insurgencies to their appropriate levels, from strategic concerns (most important), to operational concerns to tactics. Each level needs to be studied separately and at some point, interrelated.
5. Related to the above points, databases need to be constructed for analytical uses that address the appropriate levels and the appropriate time frames.
6. Time series analysis needs to be done looking at the changes in violence and actions over time and the events that might drive those changes.
7. There needs to be an examination of the how to measure the degree of population control based upon real-world examples.

There are 38 other recommendations provided in the full report on this study.

AN EXAMPLE

The foregoing is drawn from our reports. Here we present the basis for to demonstrate the solid base of data that this is developed from.

Two of our earlier and more influential findings were that we were able to see a difference in outcomes depending on the nature of the cause of the insurgency (Table 1). Those insurgencies based upon a limited developed political thought, basically a regional or factional insurgency, only resulted in insurgent victories (red victories) in 23% of our cases, while those based upon a central political idea (like nationalism or anti-colonialism) resulted in insurgent victories in 64% of our cases. The third category we worked with were those based upon an overarching concept, which in all our cases was communism, but could serve to represent any overarching ideological or religious construct.

Outcome by Type of Political Concept					
Outcome	Limited	Central	Overarching	Not Applicable	Total
Blue	24	8	8	2	42
Gray	7	2	2	0	11
Red	9	18	3	0	30
Total	40	28	13	2	83

Table 1: Outcome by Type of Political Concept.

Two-sided p-value from Fisher's exact test excluding the not applicable cases: 0.0077

Two-sided p-value Fisher's exact test excluding the not applicable and gray cases: 0.0031³

While we felt that this was a significant result, we were also getting some indication that force ratios were also a significant factor. It took us a year to finally connect the two and the results are shown below (Table 2).

Table 2: Limited (Regional or Factional).

³ Basically these Fisher Exact Tests establish that these results do not come about by chance (less than 1% chance that it did). It does not establish cause and effect.

Name	Force Ratio	Peak Insurgent Strength	Years	Winner	Classification
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63. Peacekeeping in Liberia (1990-1997)	0.38	31,000	7.11	Insurgents	INS/I
70. First Chechen War (1994-1996)	0.61	62,000	1.73	Insurgents	CONV/INS becomes INS/NI
48. Operation Tacaud (1978-1980)	0.75	19,400	2.21	Insurgents	INS/I
49. Tanzania in Uganda (1978-1980)	1.07	26,200	2.01	Intervening Force	CONV/INS becomes INS/I
23. Katanga Wars (1961-1963)	1.09	12,400	1.36	Intervening Force	CONV
67. UN Mission to Somalia (1992-1995)	1.09	32,000	2.47	Insurgents	VIOLENCE
2. Ukraine (1944-1957)	1.12	40,000	10.24	Government	INS/NI
26. Borneo (1963-1966)	1.25	22,000	3.34	Intervening Force	GUERINV
75. UN PK in Congo (2000-present)	1.28	89,250	7.85	Intervening Force	PEACE
78. PK Ivory Coast (2002-present)	1.28	52,564	5.28	Intervening Force	PEACE
80. Second PK in Liberia (2003-present)	1.52	42,604	4.41	Intervening Force	PEACE
24. Yemen (1962-1970)	1.55	40,000	7.55	Intervening Force	INS/I
66. UN PK in Yugoslavia (1992-present)	1.57	219,000	15.87	Intervening Force	PEACE
33. Chad Civil War (1965-1969)	1.60	5,000	3.42	Insurgents	INS/NI
64. PK in Lebanon (1990-present)	2.09	37,700	17.22	Ongoing	PEACE
40. French in Chad (1969-1971)	2.30	5,000	2.21	Intervening Force	INS/I
69. UN PK in Rwanda (1993-1996)	2.37	20,000	2.43	Insurgents	PEACE
60. UN PK in Angola (1988-1999)	2.45	65,600	10.19	Intervening Force	INS/I
44. Angola Civil War (1975-1991)	2.56	68,550	13.87	Intervening Force	INS/I
73. PK in Sierra Leone (1997-2005)	2.71	21,000	8.61	Intervening Force	CONV/INS becomes INS/I
16. Oman (1957-1959)	3.14	630	1.54	Intervening Force	INS/I
19. UN PK in Congo (1960-1964)	3.18	17,244	3.96	Intervening Force	PEACE
52. Uganda Civil War (1979-1986)	3.73	11,000	6.80	Insurgents	INS/NI
47. Mozambique Civil War (1976-1992)	4.08	20,000	16.60	Government	INS/I
77. US in Afghanistan (2001-present)	4.68	25,000	6.13	Ongoing	INS/I
45. Lebanon (1975-1990)	5.67	28,000	15.52	Intervening Force	INS/I
55. Contras in Nicaragua (1982-1990)	6.38	12,000	8.41	Government	INS/NI
51. El Salvador (1979-1992)	6.39	9,000	13.04	Government	INS/NI
18. La Menos Violencia (1958-1964)	8.32	8,100	6.29	Draw	VIOLENCE
13. Tibetan Revolt (1956 – 1964)	10.47	21,006	18.59	Intervening Force	INS/I
6. La Violencia (1948-1958)	11.23	6,000	9.85	Draw	VIOLENCE
68. UN PK in Mozambique (1992-1994)	11.79	20,538	1.98	Intervening Force	PEACE
79. Iraq (2003 - present)	15.39	27,000	4.79	Ongoing	CONV/INS becomes INS/I
56. Tamil Insurgency (1983-2002)	16.40	7,500	18.60	Government	INS/NI
81. UN PK in Burundi (2004-2006)	18.69	3,000	2.62	Intervening Force	PEACE
59. Kashmir (1988 - present)	40.00	10,000	19.43	Government	INS/NI

It is clear from a cursory glance, that there is not a good track record when engaged in operations against insurgent forces that outnumber you (the three cases this was tried resulted in insurgent victories). For those operations where the force ratio is between 1-to-1 and 4-to-1 the counterinsurgent usually, but not always wins. For those operations where the force ratio is above 4-to-1, there are no insurgent victories. Note: the “Peace” in the last column means peacekeeping operations, with “INS” means an insurgency of some type.

On the other hand, the picture is radically different for insurgencies based upon a central political idea (Table 3).

Table 3: Central Idea (like nationalism).

Name	Force Ratio	Peak Insurgent Strength	Years	Winner	Classification
3. Indonesia (1945-1949)	1.13	160,000	4.33	Insurgents	INS/C
5. Indochina War (1946-1954)	1.28	350,000	7.67	Insurgents	INS/C
42. Rhodesia II (1972-1979)	1.34	33,500	7.01	Insurgents	INS/I
1. UK in Palestine (1944-48)	1.58	55,500	4.29	Insurgents	INS/C
12. Cameroun (1955-1960)	1.82	3,000	4.48	Insurgents	INS/C
53. USSR in Afghanistan (1979-1989)	2.28	110,000	9.15	Insurgents	INS/I
35. Namibia (1966-1989)	2.84	14,000	22.68	Insurgents	INS/C
25. Portuguese Guinea (1963-1974)	3.35	9,560	11.26	Insurgents	INS/C
17. Vietnam I (1957-1960)	3.52	75,017	3.40	Insurgents	INS/NI
50. Cambodia (1978-1989)	4.06	64,000	10.78	Insurgents	CONV/INS becomes INS/I
37. Sandinistas (1967-1979)	4.18	4,000	12.50	Insurgents	INS/NI
22. Angola (1961-1974)	4.89	13,900	13.23	Insurgents	INS/C
43. Polisario Rebellion (1973-1991)	5.71	21,000	18.34	Intervening Force	INS/I
9. Mau Mau Revolt (1952-1956)	5.97	12,000	3.44	Intervening Force	SUP/INS becomes INS/C
28. Aden (1963-1967)	6.75	4,000	3.98	Insurgents	INS/C
30. Mozambique (1964-1974)	7.00	10,000	9.87	Insurgents	INS/C
29. Colombian Civil War (1964-present)	8.03	38,100	43.62	Government	INS/NI
14. Soviet Intervention in Hungary (1956)	8.90	15,000	0.05	Intervening Force	SUP
83. Hezbollah War (2006)	10.00	3,000	0.09	Insurgents	GUERINV
46. Indonesia in Timor (1975-1999)	10.20	3,000	24.03	Insurgents	CONV/INS becomes INS/I
10. Algerian War (1954-1962)	10.28	61,100	7.67	Insurgents	INS/C

8. Puerto Rico (1950-1954)	10.67	402	3.34	Government	SUP/INS becomes INS/NI
58. First Intifada (1987-1993)	12.95	14,050	5.77	Insurgents	INS/NI
34. Rhodesia I (1966-1972)	15.96	1,360	6.72	Government	INS/I
76. Second Intifada (2000-2005)	22.85	7,900	4.36	Draw?	INS/NI
39. Northern Ireland (1968-1998)	24.56	1,500	29.53	Intervening Force	INS/NI
11. Cyprus (1955-1959)	162.73	273	3.89	Intervening Force	INS/C

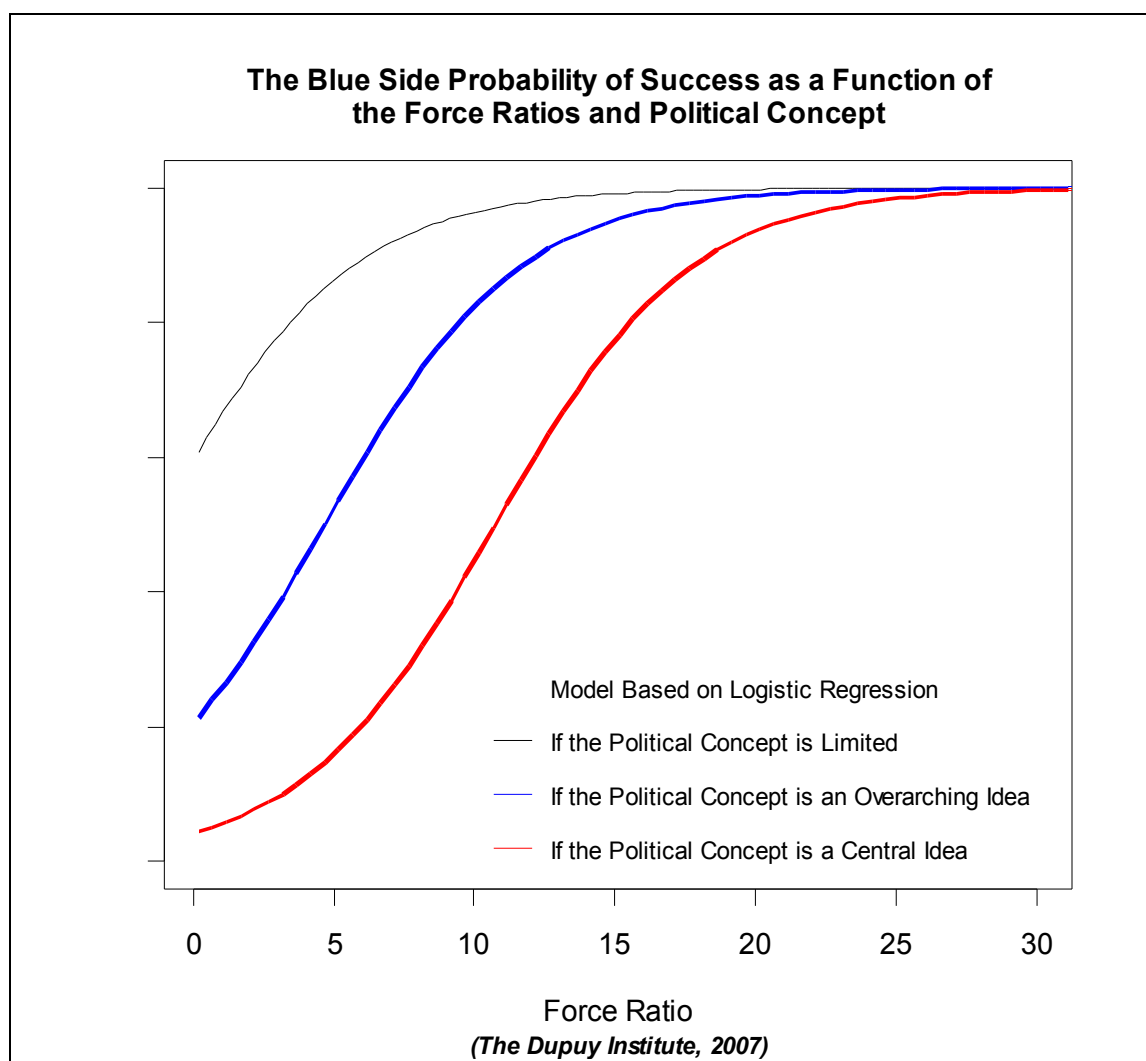
Note that in every case where the counterinsurgents outnumbered the insurgents less than 5-to-1, the insurgents won. It gets better between 5-to-1 and 10-to-1 but not good enough for the counterinsurgents. Only above 10-to-1 do we see a significant shift in favor of the counterinsurgents. These two Tables clearly establish that both cause and size (force ratios) matter. The final Table only reinforces these observations (Table 4).

Table 4: Overarching Idea (like communism).

Name	Force Ratio	Peak Insurgent Strength	Years	Winner	Classification
65. UN PK in Cambodia (1991-1993)	0.70	27,000	2.08	Intervening Force	PEACE
21. Vietnam II (1961-1964)	2.26	261,710	4.00	Insurgents	INS/I
31. Vietnam War (1965-1973)	4.32	376,000	8.08	Insurgents	INS/I
27. Tupamoro Insurgency (1963-1973)	6.67	4,200	9.92	New Government	INS/NI
32. Dhofar Rebellion (1965-1976)	6.75	2,000	10.90	Intervening Force	INS/I
4. Greek Civil War (1946-1949)	8.97	25,700	3.55	Government	INS/NI
20. Guatemala (1960-1996)	9.28	6,000	36.15	Government	INS/NI
15. Cuban Revolution (1956-1959)	10.00	3,000	2.09	Insurgents	INS/NI
7. Malaya (1948-1960)	12.91	8,200	12.13	Intervening Force	INS/I
41. Argentina (1969-1983)	22.81	5,700	14.53	New Government	INS/NI
54. Shining Path in Peru (1980-1999)	29.50	6,000	19.17	Government	INS/NI
36. Guevara Guerilla Campaign (1966-1967)	37.41	54	0.92	Government	INS/NI
38. Cabanas Insurgency (1967-1974)	105.89	350	7.55	Government	INS/NI

A LOGISTIC REGRESSION MODEL

These data can be used to develop a logistic regression model as displayed in Figure 1.



$\log\left(\frac{\pi_i}{1-\pi_i}\right)$	$= -1.34 + 0.29(\text{ForceRatios}) + 1.47(\text{Limited}) - 1.76(\text{Central})$
s.errors	(1.06) (0.11) (1.04) (1.00)
p-values	(0.1996) (0.0068) (0.0935) (0.0799)

Figure 1: A Linear Regression Model of the Blue Side Probability of Success as a Function of the Force Ratios and Political Concept.

Similar work was undertaken for the other factors we examined, including the effects of terrain, rules of engagement, levels of brutality and many others. Our work produced 10 analytical reports that totaled over a thousand pages, based upon analysis of 83 insurgencies, interventions and peacekeeping operations.

Due to other priorities, the work on this effort has shifted away from the big-picture analysis and currently no further effort is being done to refine or develop this work. We feel that this is unfortunate since we were already developing useful findings that we felt had universal application across a range of irregular warfare conflicts. More work is clearly needed.

The attendees of Cornwallis should note that some of our results look similar to that presented at Cornwallis by Andrew Hossack of the UK. In fact, Mr. Hossack's and our

research and work were developed entirely independently. We only become aware of Mr. Hossack's work later due to Cornwallis and Gene Visco. The fact that many of our conclusions are similar to his, simply serves to demonstrate what can be done with a little solid historical research and analysis developed from that. In the UK, they actually now label what we do as a separate discipline of Operations Research, called Historical Analysis.

This work is beyond the reach of any single individual. In our case, it was conducted by a team of a dozen researchers, historians, analysts, and statisticians over the course of more than a year. We wish to thank all of our various sponsors for giving us a chance to develop the work to this extent.