

## The Revolution Begins On Page Five:

*The Changing Nature Of The National Intelligence Estimate  
And Its Implications For Intelligence*

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## The Revolution Begins On Page Five:

### ***The Changing Nature Of The NIE And Its Implications For Intelligence***

There has been a good bit of discussion [in the press](#)<sup>1</sup> and [elsewhere](#) concerning the recently released [National Intelligence Estimate \(NIE\) on Iran's nuclear program](#). Virtually all of this commentary has focused on the facts, sources and logic – the *content* – of the estimate. It is my position that, while the content is fascinating, the most interesting story behind the NIE has to do with the changes in *form* that this latest NIE has adopted; that what the National Intelligence Council (NIC) has said is, in many ways, less interesting than the way it has decided to say it.

The NIE is arguably the [highest form of the intelligence art](#). Typically strategic in scope and focused on only the most important issues of the day, the authors of these documents, located primarily at the [National Intelligence Council](#), are considered to be the best analysts in the US intelligence community. The US intelligence community, with its [nearly 50 billion dollar budget](#) and its vast human and technical resources, is, likewise, the undeniable thought leader for the broader intelligence community including the up-and-coming [law enforcement](#) and [business and competitive intelligence](#) communities. This shift in form, then, implies a new, emerging theory of intelligence – what intelligence is and how to do it – that is likely to influence intelligence communities worldwide. “Emerging”, however, is the key term here. As the rest of the article will highlight, the revolution may have begun but it is far from complete.<sup>2</sup>

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<sup>1</sup> This article was originally published as a series of blog post (see Note 2 below). I have kept the hyperlink style of sourcing as a result. I also think, in this pre-publication version of this paper, it actually makes it easier to check sources.

<sup>2</sup> This article was originally published on my blog, *Sources and Methods* and can still be found there ([www.sourcesandmethods.blogspot.com](http://www.sourcesandmethods.blogspot.com)). Included in those posts was an explanation about why I chose to blog this article first. That Explanation is reproduced here: “I suppose the traditional sort of place for this kind of thing is an academic journal but the experimental nature and immediate feedback of the blog format really appeal to me. I particularly like being able to make sources (if they are on the internet and

## Some History

While the NIC [publishes some of its research](#) for public consumption, releasing NIEs, even the key judgments from NIEs, was, up until 2007, virtually unheard of. The intelligence community considers NIEs, which likely contain highly classified information, to be closely guarded secrets and only a handful have been released prior to the ones discussed in this article. These include reports on such topics as [SARS](#), [AIDS](#) and [Humanitarian Emergencies](#). While a number of [declassified NIEs](#) have been available to researchers (for example, [the NIE on Yugoslavia in 1990](#)), the release of an NIE that concerned a current, sensitive issue was, until recently, simply not done.

In some sense though, this recent spate of releases is a natural extension of a process that began several years ago with the [9/11 Commission](#) and the release of another highly classified document, the August 6, 2001 President's Daily Brief ("[Bin Laden Determined To Strike the United States](#)") and the [WMD Commission's](#) dissection of the [2002 Iraq WMD NIE](#). Once policymakers had seen the impact that the release of these documents had on the debate regarding these issues, it was a small step to start demanding the release of a sanitized version of the key judgments for public review while the policy debate was still underway.

In 2006, the NIC, upon the request of Congress, made a version of its assessment regarding the [Global War on Terror](#) available and in 2007 the NIC released three additional NIEs on Congress' request and the Director Of National Intelligence's (DNI's) order ([Prospects For Iraq's Stability](#) and its [update](#) plus [The Terrorist Threat To the US Homeland](#)). Two other, significantly less well known NIEs from 2002-2003 were also released as part of the Senate's investigation into [prewar intelligence assessments about postwar Iraq](#). The DNI likely realized that the routine release of NIEs would, to a significant extent, defeat their purpose, i.e. to reduce national security policymakers' level of uncertainty regarding external factors that could impact US national security issues. As a result, he [formulated a policy](#) that explicitly stated that such releases would not become the norm. This did not, however, stop the DNI from releasing the Key Judgments from the Iran NIE several weeks ago.

While the release of NIEs is unlikely to ever become "normal" (The NIC writes many NIEs in a given year and the few released in 2006-2007 likely make up a small fraction of the total number of NIEs completed), the *potential* for such a release has become the norm. It is this potential for increased Congressional and public scrutiny that is likely

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increasingly they are) immediately available to the reader. I am well aware that this intersection between Web 2.0 and academia is largely seen as "service" rather than "scholarship" [by most tenure committees](#) but I don't see how posting this research to a blog precludes cleaning it up and publishing it in a journal later and I suspect such a "finished" article will be better for the comments that it receives in advance of publication. I am also hoping that the bite size chunks inherent in blog writing, published one a day, Monday through Friday, will make it easier for me to write and for you to read..."

the driving factor behind the dramatic and largely positive changes that have taken place over the last 12 months in the way the NIE communicates its estimative conclusions to decisionmakers.

### The Revolution Begins

The three pages and a paragraph that constitute the sanitized key judgments of the 2006 NIE on [Trends in Global Terrorism](#) was the first of the recent NIEs that the DNI released at about the same time it was produced. While the reasons for its release are tied to Congressional action, it also likely has to do with a desire to show greater transparency in the face of the withering criticism of the intelligence community over the previous several years and to show that the relatively new DNI position was not just conducting business as usual. That said, the document itself provides no context in which to place either the estimative judgments or the intelligence requirement the NIE addresses.

This was quickly rectified in the next NIE, released in January 2007 and dealing with the issue of [prospects for Iraq's stability](#). Complete with a professionally produced cover sheet, the January 2007 NIE sought to not only explain the roles and functions of the DNI and the NIC but also provide background on the NIE process generally and on the process for preparing this NIE specifically.

The really interesting stuff begins on page five, though. Here is where the authors, and by extension, the intelligence community, explained the terms of art traditionally used in an estimate. In order to do this, the authors had to come to grips with these definitional and theoretical issues themselves. In other professions, such as law or accounting, any discussion of definitions or theory would inevitably tap into the experience of its professionals but also take advantage of a large body of work done by a variety of experts over the years that would have been well documented in judicial opinions, peer-reviewed research papers or approved by standards setting committees. Such is not the case in intelligence.

Most intelligence professionals are practitioners (of one kind or another) and are so busy *doing* that they have little time (and sometimes little interest) for reflection, codification or other theoretical work. The intelligence studies discipline is relatively new and has had little to work with (notwithstanding the best efforts of the [Federation Of American Scientists](#) and the [National Security Archive at GW](#)) until very recently. The intelligence community itself [has done some work in this area](#) but it has come in fits and starts and to this date there is not even a generally agreed upon definition of intelligence (certainly not one broad enough to cover business and law enforcement intelligence activities as well as national security interests).

Thus, while the explanation of estimative language that accompanies each of the last four publicly available NIEs could be seen as adminis-trivia or, even worse, an attempt to escape blame should the estimate prove wrong, the process of having to explain itself to others actually forced the intelligence community to come to grips with the nature of its profession more quickly than anything in the past 60 years. In a little over a year, likely driven by a genuine desire to do a better job coupled with an intense desire to avoid any more public thrashings at the hands of the legislative branch (or its executive branch masters, for that matter), the intelligence community, with its best analysts on its most important products, has dramatically changed the way it communicates its results to national security policymakers.

By publicly explaining itself, the intelligence community has set precedents – precedents it can repudiate only at the risk of its credibility. Whether the community intended it or not, whether it likes it or not, these public explanations of estimative language begin to define an emerging (and, as I will outline later on, still unfinished) theory of intelligence.

### Page Five In Detail

What, then, is so darn unique about page five? While the format and language of the “Explanation of Estimative Language” page (hereinafter the “EEL”) has undergone some changes (for the better) over the last four publicly released NIEs, all of the estimates that contain such a page make the same three key points:

First, the National Intelligence Estimate is...well...an estimate. The authors intend this to be a probabilistic judgment, not a statement of fact. This may seem obvious but, to many casual readers, there may still be a lingering impression that the CIA, NSA and the other 14 agencies that make up the National Security Community are omniscient. Sorry, this is not the case and the authors of the NIEs at the National Intelligence Council (NIC) want us to know it.

Second, there is a discussion of *Estimates of Likelihood*. Specifically, this section talks about what the intelligence community commonly calls [Words of Estimative Probability](#) (WEPs -- after the [Sherman Ken](#) article of the same name) and what linguistics professionals usually refer to as [Verbal Uncertainty Expressions](#). These are words, such as "likely", "probably", or "almost certainly", that convey a sense of probability without coming right out and saying “60%” or whatever.

Noted MIT scholar [Michael Schrage](#) came out quite forcefully against this type of estimative language in [a Washington Post editorial](#) in 2005. In the same article he spoke very favorably of using percentages and [Bayesian statistical methods](#) to get them. Despite this kind of criticism, the NIC, in the early versions of the EEL page, noted that, “Assigning precise numerical ratings to such judgments would imply more rigor than

we intended”. While this language was dropped in the Iran NIE (probably due to space constraints), it likely continues to represent the NIC’s position.

Regardless of its desire to avoid numbers, the NIC still effectively benchmarks its WEPs in two ways. First, it makes it clear that words such as "probably", "likely", "very likely" and "almost certainly" indicate a greater than even chance (above 50%) while words like "unlikely" and "remote" indicate a less than even chance (below 50%). In addition, the NIC also provides a handy scale that, while it is devoid of numbers, clearly rank orders the WEPs in regular increments. While the rank ordering is more important than the actual increments, [early version](#)s have five increments implying roughly 20%



intervals for each word. The most recent version in the [Iran NIE](#) has seven intervals (see the chart below) implying intervals of approximately 14%.

The EEL page also identifies the language the authors will use for improbable but potentially important events. These words and phrases include such old standards as "possible/possibly", "may", and "might" and phrases such as "we cannot dismiss" and "we cannot rule out".

I intend to write quite a bit about WEPs later on but one point is absolutely clear: This move towards consistency in the use of language is an incredibly positive step forward but the “poets” in the IC have only been defeated, not routed. [Kent defined poets](#) as the type of analysts who “... appear to believe the most a writer can achieve when working in a speculative area of human affairs is communication in only the broadest general sense. If he gets the wrong message across or no message at all-well, that is life.” There has been, as we will see later in this article, either a real hesitancy or a real lack of understanding of the value of consistent terminology on the part of many analysts in the intelligence community.

Consistent terminology, however, is something that decisionmakers have been

requesting from intelligence professionals for decades. Mercyhurst alumna, Jen Wozny, wrote a carefully researched thesis on the topic (currently only available through [inter-library loan with the Hammermill Library](#) at Mercyhurst), exploring what over 40 decisionmakers said they wanted from intelligence. One of the key requests, of course, was consistent terminology. I consider it likely that the potential for broader distribution brought on by the recent Congressional requests and the public scrutiny of these latest NIEs essentially forced the Intelligence Community to adopt the more or less consistent series of terms described above. While it may seem ludicrous to many (especially in the business or scientific communities) that this was a real debate in the intelligence community, it was and, based on the differences between what the EEL page says and what was actually done (which will make up the bulk of the remaining parts of this article), it still is.

Third and finally, the EEL page explains what the NIC means when it talks about “*confidence in assessments*”. This concept is difficult to explain to most people and the NIC has not been very helpful with their brief discussion of the concept. Confidence in an assessment is a very different thing than the assessment itself.

Imagine two analysts working on the same problem. One is young, inexperienced, working on what is generally considered a tough problem on a tight time schedule. He is unfamiliar with a number of key sources and cannot adequately judge the reliability of the ones he does have. When pressed to make an estimate regarding this problem, he states that he thinks that “X is likely to happen”. The second analyst is a seasoned analyst with adequate time to think about the problem and considerable experience in the subject in question. He knows where all the sources are and knows which ones are good and which ones are to be taken with a large grain of salt. He, too, states that he thinks, “X is likely to happen.” Both analysts have given *the same assessment of the same problem*. The level of confidence of the first analyst is likely much lower than the level of confidence of the second analyst, however.

The important thing to note is that the analyst is expressing confidence in his probabilistic assessment. In the first case the young analyst is essentially saying “I think X is likely but for a number of reasons, not the least of which is my own inexperience, I think that this assessment could be way off. If I knew just a little bit more, I could come back to you saying that X is anything from remote to virtually certain.” In the second case, the senior analyst would say, “I think X is likely, but because I know a lot about this problem and how to do analysis, I am fairly comfortable that X is likely and even if I went out and did more research, my estimate would still probably be, “X is likely”.

How does one determine a level of analytic confidence, though? What are the appropriate elements and how are they measured? How do you know when you have crossed the line from low to moderate and the line from moderate to high (the three levels of confidence used on the EEL page)? The discussion above suggests that there

are a number of legitimate factors that analysts should consider before making a statement of analytic confidence. The EEL page, strangely, does not see it that way, preferring to tie it only to the quality of the information and the nature of the problem (presumably some sort of scale running from easy to hard).

Recent research by a Mercyhurst grad student, Josh Peterson, suggests that a number of things legitimately influence analytic confidence including, among others, subject matter expertise ([though it is likely not as important as some people think](#)), time on target, the use of structured methods in the analysis, the degree and way in which analysts collaborate on the product, etc. I suspect that the IC is well aware of at least some of these other elements of analytic confidence (I am hard pressed to imagine, for example, senior officials in the IC stating that the subject matter expertise of their analysts doesn't matter in their calculation of confidence yet it is not mentioned as an element in the EEL page). I find it disingenuous that they do not list these broader elements that could impact analytic confidence.

Despite these caveats and the minor weaknesses, the EEL implies a fairly comprehensive vision of what I have begun calling a *theoretically complete estimate*. How might such an estimate appear? Something like, “We estimate that X is likely to happen and our confidence in this assessment is high.” Translated, this might look like, “We are willing to make a rough probabilistic statement (Point 1 in the EEL) indicating that we think alternative X has about a 60-75% chance of occurring (Point 2 in the EEL). Because we have pretty good sources and this problem is not that difficult we are very comfortable that the actual range might be a bit broader but we don't think it is by much (Point 3 in the EEL).”

Ideally, decisionmakers want to know the future with certainty. Despite what the cynics in the IC might say, realistic decisionmakers understand that intelligence professionals deal with unstructured and incomplete data, some of which is deliberately deceptive, concerning difficult and even intractable problems and that certainty, as an intelligence judgment, is impossible. Under these circumstances, the structure outlined in the EEL pages of these recent NIE's seems both reasonable and useful.

### **Enough Exposition! Let's Get Down To It...**

Having laid out this vision of a “theoretically complete estimate” (my words not theirs), how then does the [Intelligence Community](#) (IC) use it? To what extent do these carefully crafted words defined on page five (and in one case, page six) of the most recent NIEs actually get used in these documents? The answer is really going to surprise you.

Let me start with the issue of confidence in assessments in the recent NIEs as this is the place where the change is most dramatic. In order to benchmark the estimates, I started

by counting the number of sentences in each of the last several NIEs. For comparison purposes, I included the [2002 WMD NIE](#) and the [1990 Yugoslavia NIE](#) as well. I only looked at the Key Judgments of each NIE. While I understand that there is a good bit more information in the full NIE than in the Key Judgments, I am virtually certain that the bulk of the NIE is consistent with the Key Judgments whether they are made public or not.

NIE	Iran Nukes: DEC 2007	Iraq Stability: AUG 2007	Terror at Home: JUL 07	Iraq Stability: JAN 07	Global Terror: APR 06	Iraq WMD: OCT 02	Yugo NIE: OCT 90
# Sentences	31	51	23	39	42	52	25

As you can see by the chart above the numbers are fairly consistent across the NIEs. The minimum number of sentences is 25 with a maximum of 52. The average is 38. I don't consider these differences in length to be important. They are likely explained by the nature of the subject matter and the level of detail of the full text NIE. I wanted, however, to be able to compare words and phrases defined in the Explanation of Estimative Language (EEL) pages across multiple NIEs and I knew that mere numbers of uses of the word "likely", for example, could be skewed by the length of the estimate (i.e. the longer the estimate, the more times a certain word would probably be used). I also considered it unlikely that Words of Estimative Probability (WEPs) and other special words (as defined by the EEL page) would be used multiple times in a single sentence. Number of sentences, therefore, while not perfect, seemed to me to be a useful denominator.

If the number of sentences is the denominator, what about statements of confidence, the numerator? I generated this number by searching each of the Judgments for each of the words or phrases highlighted in the EELs and then going back through and reading for words that might serve the same purpose but were not specifically mentioned in the EEL. Looking at the number of sentences with explicit levels of confidence in each of the identified estimates tells a startling story:

NIE	Iran Nukes: DEC 2007	Iraq Stability: AUG 2007	Terror at Home: JUL 07	Iraq Stability: JAN 07	Global Terror: APR 06	Iraq WMD: OCT 02	Yugo NIE: OCT 90
# Sentences	31	51	23	39	42	52	25
High	8	0	0	0	0	4	0
Moderate	7	0	0	0	0	1	0
Low	1	0	0	0	0	3	0
Moderate to High	3						
% Sentences with Confidence	61.30%	0	0	0	0	15%	0

What immediately jumps out is the number of sentences that contain statements of confidence in the Iran NIE – 19 out of the 31 total sentences or almost 2/3 of the sentences in the Iran NIE – compared with other NIEs. None of the others come even close and the majority of them (including the three other NIEs that contained EEL pages that specifically said expressions of confidence were going to be used) contain none. Not one.

Frankly (and abandoning any pretense of academic detachment for a minute) this stuns me. I have a good deal of respect for the analysts in the NIC and throughout the IC but what were they thinking when they put the previous NIEs in 2007 together? That no one would notice? If that is the case, they were probably correct. Certainly I have not seen a single critique that highlights the absolute inconsistency of stating, “We intend to assess confidence” and then not doing it – three times in a row. That they never said they *had* to use statements of confidence? That is quibbling. The whole purpose of the EEL is to define “What We Mean When We Say...”. It’s like including a Spanish glossary at the front of a Chinese textbook and then saying, “We never said we had to write the textbook in Spanish.” Why make a point of including an explanation of statements of confidence and then not using them at all? That the expressions of confidence are in the classified but not the unclassified version? That makes even less sense and I don’t think the IC is that dumb. That they had never done it before? Nonsense. The Iraq WMD estimate contained explicit references to confidence. I’m sorry, but three times in a row is too strong of a pattern to ignore. The failure to do what the Intelligence Community said it would do was intentional.

The worst case scenario is that the IC suspects that [no one is reading these things anyway](#) or, if they are, they believe the readers are only going [to cherry-pick the parts that serve their policy or political purposes](#). In this context, carefully nuancing your statements and enforcing strict consistency, indeed any consistency, in your use of words is just wasted effort. This is a cynics-eye view yet, sadly, the evidence seems to support it.

That is a shame. Many very smart, dedicated people work in the IC. Many of them are putting their lives on the line to collect, process and analyze the information our decisionmakers need to make good decisions. Certainly the taxpayer has borne a not insignificant burden funding it. The IC's work should be applause-worthy but saying one thing and doing another is not a cause for either confidence or approbation. Water under the bridge, at this point, of course. The Iran NIE obviously fixed all that, you might say.

Not so fast.

## Digging Deeper

There are some disturbing trends in other numbers collected from the [Iran NIE](#). For example, 71% of the sentences in the Iran NIE contain one of the three statements “we assess”, “we judge” or “we estimate”. As you will recall, this is the way the Intelligence Community (IC) indicated it would preface its estimative conclusions. Compare this with the number of sentences with statements of confidence, i.e. 61% and I become confused. I could see there being *fewer sentences* beginning with these three phrases (it would get tedious to constantly see “we assess”, “we estimate” or “we judge” all the time) but how do you get *more*? That means that there are at least some estimates marked by the words that the community has stated it would use to mark such estimates that do not also contain statements of confidence.

Not that big of a deal, you say. OK, I agree, but consider this: Only 29% of the sentences in the Iran NIE contain [Words of Estimative Probability](#) (WEPs)! That means that there are some, perhaps many, sentences that indicate that they are estimative in nature but are missing one and perhaps both of the other two elements (WEPs or an assessment of confidence) that the Intelligence Community itself said it would use.

It makes my head hurt.

Let’s review the bidding: Up until the DNI released the Iran NIE, the IC was saying one thing and then doing another with regard to statements of confidence in their estimates. The Iran NIE dramatically reversed this trend and included statements of confidence in almost two thirds of its sentences... but, while this is an undeniable improvement, there are still numbers that don’t add up.

## Looking At The Fine Print

Let’s take a look at an example from the [Iran NIE](#) and see if we can figure out what is going on.

- *We judge with high confidence that Iran will not be technically capable of producing and reprocessing enough plutonium for a weapon before about 2015.*

What is missing in this example and many other statements in the NIE, of course, is an [estimate of likelihood \(or Word Of Estimative Probability \(WEP\)\)](#), if you prefer). The estimate does not say “...will not *likely* be technically capable ...” Instead, the verb phrase “*will not be technically capable*” implies certainty about a future event – which is, by definition, uncertain.

Even in cases where the event happened in the past but the information regarding the event contains inconsistencies or uncertainties (in other words the event is not

definitively factual) such as this statement (also from the Iran NIE), “We assess with high confidence that until fall 2003, Iranian military entities were working under government direction to develop nuclear weapons”, it seems inappropriate to not use estimative language in conjunction with a statement of confidence.

In other words, if the IC knew for certain that Iranian military entities were working under government direction to develop nuclear weapons then they should not be indicating a probabilistic statement by saying “we assess”. If, on the other hand, they are not entirely certain, then they should not say “Iranian military entities *were working*” but rather “it is *virtually certain* that Iranian military entities were working” or whatever the analysts believe is the appropriate estimate of likelihood. Mixing the formulations makes the definitions laid out in the [Explanation of Estimative Language \(EEL\) page](#) -- the "page five" in the title -- meaningless.

This is problematic for several additional reasons. First, it is bound to be confusing to the reader. Having carefully explained that “We judge” is an indicator of estimation but then phrasing the statement in terms of certainty makes the attentive reader wonder what the IC really means; is this statement a fact or an assessment? It could be read both ways. Second, another graduate student with whom I have worked, Mike Lyden, has done some very interesting research comparing NIE estimative statements against historical fact (his thesis that contains the research is available currently only through [inter-library loan](#)). Across the last 40 years, estimates that used WEPs tend to be about 75% accurate. Statements that use words of certainty hover around 50% accuracy (the sampling size was large enough that this difference was statistically significant to several decimal places as I recall). Mike speculates that this difference may be tied up with psychological notions of confidence (explained later) but whatever the reason, the evidence is pretty compelling – the Intelligence Community makes better estimates when it does not use words of certainty.

Another possibility, of course, is that I have got it all wrong; that I have mischaracterized what the IC intended to do when they defined “confidence” the way they did. Indeed, there are several other ways that the word "confidence" could be interpreted that would work in this sentence.

First, confidence could refer to *psychological confidence* or the way the analyst "feels" about the assessment. Psychologists have long known that the more information you get the more confident you feel in your assessment of a situation. Up to a point, this increasing confidence is warranted. Fairly quickly, however, your mind forms a more or less rigid conceptual model of the problem you are facing so that your mind takes each new fact and tends to either force it into the existing model or discard it as irrelevant. The net effect of this is that, while you feel increasingly confident, your chances of being correct stay about the same. Psychologists call this [Overconfidence Bias](#) and it is generally considered a bad thing in analysis. Moreover, [it is well known within](#)

[intelligence circles](#), having been covered extensively by [Richards Heuer](#) in his classic, *[Psychology Of Intelligence Analysis](#)*. It is, therefore, unlikely to be what the IC means when it talks about confidence on the EEL page.

Second, confidence is often used as a *synonym for likelihood* as in “I am highly confident that New England will win the Super Bowl.” While this works in casual speech, this certainly makes no sense in the context of this NIE. The EEL page defines an entirely different way of ascribing levels of likelihood to its assessments and specifically states that the level of confidence language applies “to our *assessments* (italics mine).” To use confidence as a synonym for likelihood would be tantamount to the IC saying one thing and doing another which, well, they have already done. I don’t, however, think they would be that silly again. For the same reason, the introductory phrases, “we assess”, “we judge” and “we estimate” can’t be considered to be expressions of likelihood either.

Third, and likely most closely related to what the IC means, is a *statistical notion of confidence*, commonly expressed as a [margin of error](#). The form of the statement is quite familiar to most of us: “Candidate X leads in the polls, 61 to 39% (plus or minus 3 percent).” This means (typically at the 95% [confidence level](#) – yet another statistical term) that Candidate X’s true lead could be as low as 58% or as high as 64%. This form certainly seems to mirror the form examined earlier. High confidence under this interpretation would mean that the margin of error is low, that the true probability hovers near the estimate made by the authors of the estimate. The problem here comes in the way the IC has actually used confidence in these phrases. If they mean it to be interpreted statistically it makes no sense to then say something that would be functionally equivalent to “. . . plus or minus 3 percent, Iran will not be technically capable. . .”. This kind of statement and others like it only make sense when associated with a probability or, in the case of the NIE, an [Estimate Of Likelihood](#).

This, in turn, brings me back to the more general notion of *analytic confidence* that I discussed earlier. Certainly the IC does not want to convey numerical certainty and has said so (at least in early forms of the EEL page) but this idea of analytic confidence seems similar to the idea of statistical confidence. By using words (not numbers) that express likelihood and then using words (not numbers) to express its confidence in an expression of likelihood, the IC’s implied definition of analytic confidence would resonate with, but not mirror, what many people already generally understand, i.e. the statistical notion of confidence. Just as with statistical notions of confidence, however, this idea of analytic confidence only makes sense if there is an expression of likelihood to go with it.

Which leaves me with a problem. I don’t know what the IC means when they talk about confidence. The EEL page implies they intend to use it one way. Then they do

something entirely different in the text and none of the possible variations in meaning makes any sense. They do it so many times that I can't ascribe it to accident. I am just an average Joe. The first alternative is that I just don't understand. I am prepared to admit that. I would suggest, however, that the current form of the EEL page needs to be changed so that it is clearer. I guarantee that if I cannot understand what it means, there are many more average Joes that are struggling with it (or just ignoring it) as well.

The second alternative – and one that is a bit more unnerving – is that the IC does not know what it means when it says high, moderate or low confidence. Perhaps sometimes they are using it to describe how they feel about their position, sometimes they may be using it as a synonym for an estimate and sometimes they may mean it more statistically, leaving it up to the reader to figure out which it is from the context.

**Confidence Is Not the Only Issue**

Some 29% of the sentences in the [Iran National Intelligence Estimate](#) (NIE) do contain [Words of Estimative Probability](#) (WEPS), however. As the chart below shows, this is pretty much in line with other NIEs. The chart outlines the number of uses of a particular word in an estimative sense in each of the eight NIEs I examined. Again, I

NIE	Iran Nukes: DEC 2007	Iraq Stability: AUG 2007	Terror at Home: JUL 07	Iraq Stability: JAN 07	Global Terror: APR 06	Iraq WMD: OCT 02	Yugo NIE: OCT 90	Total/Percent of Sentences
Remote	0	0	0	0	0	0	0	0/0%
Very Unlikely	1	0	0	0	0	0	0	1/4%
Unlikely	0	1	0	1	0	1	2	5/2%
Even Chance	0	0	0	0	0	1	0	1/4%
Probably	8	7	2	0	2	14	0	33/13%
Likely	0	0	2	1	3	0	2	8/3%
Very Likely	0	0	0	0	0	0	0	0/0%
Almost Certainly	0	0	0	1	0	0	0	1/4%
Most likely	0	1	0	0	0	0	0	1/4%
More likely	0	0	1	0	0	2	0	3/1%
Not likely	0	0	1	0	0	0	0	1/4%
Increasingly likely	0	0	0	0	1	0	0	1/4%
much less likely	0	0	0	0	0	1	0	1/4%
<hr/>								
% of sentences w/auth. WEPS	29%	16%	17%	10%	12%	31%	16%	49/19%
% of sentences w/unauth. WEPS	0%	2%	9%	0%	2%	6%	0%	9/3%

only looked at the words in the Key Judgments (not in any of the prefatory matter or in any of the full text or appendices). The column on the far right shows the percent of the time a particular WEP showed up in NIEs generally. In other words, "probably" was used in 33 sentences and there were 263 sentences total in the 7 NIEs examined, so it showed up about 13% of the time. I am also well aware that such a simple review is

fraught with difficulty given the complexity of the English language but, since I am only looking for broad trends, I believe that such a review is an appropriate method for analyzing the way in which these estimates were written and the way in which they are changing.

In fact, the Iran NIE is well within the range of other NIEs with respect to percent of sentences containing WEPs. Furthermore, the Iran NIE does not use any “unauthorized” WEPs. That is to say, only WEPs specifically listed on the [Explanation of Estimative Language \(EEL\) page](#) are used in the Iran NIE. This was not the case in previous NIEs which used (though not often) statements that were undefined at a minimum and misleading at their worst. Consider the use of “most likely” in the [August 2007 update to “Prospects for Iraq’s Stability”](#):

- *We judge such initiatives are most likely to succeed in predominantly Sunni Arab areas, where the presence of AQI elements has been significant, tribal networks and identities are strong, the local government is weak, sectarian conflict is low, and the ISF tolerate Sunni initiatives, as illustrated by Al Anbar Province.*

“Most likely” could mean many things in this context since there is no baseline probability with which to compare it. The initiatives referenced in the report could be likely to succeed or unlikely to succeed; the reader cannot know from the text. All we can know is that they are “most likely” to succeed in the predominantly Sunni areas. Other formulations, such as “much less likely” and “increasingly likely”, suffer from the same problem. “Not likely” is the only place where I am clearly quibbling as it is obviously synonymous with unlikely. I just think it is silly to state that [the authors intend to use “unlikely” on page 5 \(the EEL page\)](#) and then ignore that and use “not likely” in the text. If the two are truly synonymous then use the one you said you were going to use. If they aren’t synonymous, then explain the difference. You can’t have it both ways.

Beyond the mere use of WEPs, there also appears to be an issue with which WEPs predominate. Again, there is a strong pattern – the clear preference over the last 6 public NIEs for the use of the word “probably”. In fact 73% of authorized and 62% of all WEPs used in the last six NIEs are “probably”. It is also interesting to note that the only non-millennial NIE examined, the 1990 Yugo NIE did not use “probably” at all (whether this pattern holds and whether this was a good thing, I will leave to other researchers).

If the analysts involved in these estimates genuinely believe that all these events are “probable” and not somewhat more or less likely then there is little to discuss. The extreme overuse of the term suggests other explanations, however. “Probably” is arguably [one of the broadest WEPs in terms of meaning \(see Figure 1 in the paper](#)

[linked here](#)). Fairly clearly it means that the odds are above even chance but it seems open to interpretation from there.

Thus, analysts could be using "probably" as an analytic safe haven. Relatively certain that the odds are above 50% but unwilling to be more aggressive and use a phrase such as “highly likely” or “virtually certain” and unaware or unable to use expressions of confidence to appropriately nuance these more aggressive terms, these analysts default to “probably”. Since the NIE is a consensus estimate combining input from all 16 intelligence agencies, it is also possible that "probably" was the one word upon which everyone could agree; that it represents, essentially, a compromise position. Either way, such a move is “safe” in terms of getting the answer broadly correct but hurts the decisionmaker who, in the end, must take action and allocate resources. If analysts are more certain than they are willing to put in writing, the decisionmaker is deprived of the analysts’ best judgment and will arguably make less informed decisions.

(Note: The statistical analogy to the issue described above is the classic problem of calibration versus discrimination. For additional insights into this issue I refer you to Phillip Tetlock’s book [Expert Political Judgment](#) or to [this site](#)).

**Waffle Words And Intel-Speak**

The [WEPs](#) outlined above are not the only WEPs that analysts can use to express probabilistic judgments. The recent NIEs also specifically refer to a series of words such as "might" or "may" and phrases such as “we cannot dismiss” or “we cannot rule out” that are meant to signify events of undetermined probability or events that are remote but significant if they do occur. Analysts often perceive the use of some of these type words as unavoidable if they wish to convey the full range of possibilities inherent in an estimate. Decisionmakers have another attitude about these words. They call them

NIE	Iran Nukes: DEC 2007	Iraq Stability: AUG 2007	Terror at Home: JUL 07	Iraq Stability: JAN 07	Global Terror: APR 06	Iraq WMD: OCT 02	Yugo NIE: OCT 90	Totals
# Sentences	31	51	23	39	42	52	25	263
<i>if</i>	2	2	2	1	3	4	0	14/5%
<i>may</i>	2	0	3	0	1	0	0	6/2%
<i>might</i>	2	1	0	2	1	3	0	9/3%
<i>possibly/possible</i>	0	0	0	0	0	2	0	2/1%
<i>should</i>	0	0	0	1	2	0	0	3/1%
<i>could</i>	2	5	0	7	6	2	0	22/8%
<i>unless</i>	0	1	0	1	0	0	0	3/1%
<i>hard pressed</i>	0	0	0	2	0	0	0	2/1%
<i>we cannot dismiss</i>	0	0	0	0	0	0	0	0
<i>we cannot rule out</i>	1	0	0	0	0	0	0	1/.4%
<i>we cannot discount</i>	0	0	0	0	0	0	0	0
<i>cannot</i>	0	0	0	0	1	0	0	1/.4%
%Sentences with Waffle Words	29%	18%	22%	36%	33%	22%	0%	62/24%
%Sentences with WEPs (ALL)	29%	18%	26%	10%	14%	37%	16%	49/22%

"waffle words" or "intel-speak" and often believe that the primary reason for their inclusion is to cover the analyst's backside.

The six public estimates reviewed in this sample contain a number of these type words. Again, I counted only examples where the analyst was making an estimate (excluding, for example, those times where "might" was used as a noun). I included a broader range of waffle words than some might agree to on first blush. I hope to outline the problems with each but there seems to be three conclusions that jump out from the chart above. First, there appear to be roughly the same number of waffle words as there are statements containing WEPS (In fact, in the [Iran NIE](#), the number was exactly the same) across the entire set of NIEs examined. I think this is a bad thing and will argue (hopefully convincingly) later on that, using the system the Intelligence Community (IC) has already laid out, there is not only a good reason not to use waffle words but also a simple way to keep from ever having to use intel-speak again.

Second, it seems likely that the ratio of waffle word sentences to WEP sentences is a good indicator of overall confidence in the estimate. I find it fascinating, for example, that the first [Iraq Stability NIE](#) contained *over 3 times* as many sentences using waffle words such as "could" and "might" as sentences containing more meaningful WEPs such as "likely". Such a strong preference for one type of formulation over another sends a strong signal that the analysts involved were (perhaps unconsciously) hedging their bets in a very real way.

The third conclusion is that there is a moderately strong preference for the waffle-words, "could" and "if". It is easy to see what is wrong with "could". Anything "could" happen. To tell a decisionmaker that something could happen is to *increase* his or her uncertainty, not reduce it. Certainly, with no WEP and confidence statement to even roughly assign a probability to the described event, decisionmakers are left on their own to figure out an appropriate level of time or other resources to devote to thwarting this nebulous threat or to take advantage of this ephemeral opportunity. This is tantamount to asking the decisionmaker to be the analyst! "All I can figure out is that something could happen, boss," the IC seems to be saying, "You need to figure out how likely it is so you can assign the appropriate resources to deal with it. Oh, and by the way, if you guess wrong, I will still be able to say that I warned you." It is easy to see why decisionmakers don't like "could".

Take a look at this statement from the [August 2007 Prospects for Iraq's Stability NIE](#):

- *A multi-stage process involving the Iraqi Government providing support and legitimacy for such initiatives could foster over the longer term political reconciliation between the participating Sunni Arabs and the national government.*

Or it could not. The use of the word “could” here is really not very helpful. I suppose it is possible that the policymakers that were involved with the Iraq situation at the time were not aware of this possibility but I doubt it. Now the policymakers themselves have to figure out if they should pursue a policy that supports the Iraqi Government along these lines or not. The IC has pointed out the obvious (to the decisionmakers, anyway) and has not given them any sense of which way it will go.

How might it have been better phrased? What about:

- *We assess with low confidence that a multi-stage process involving the Iraqi Government providing support and legitimacy for such initiatives will likely foster over the longer term political reconciliation between the participating Sunni Arabs and the national government.*

While the specific terms I have used here ("low confidence" and "likely") are clearly notional (I don't know what words the authors would have used had they used this formulation), this statement is entirely consistent with the guidelines laid out in the Explanation of Estimative Language (EEL) page. It does what the intel community should do, make the call, while still being properly caveated. It does not ask the decisionmaker to be the analyst as well. Finally, the analyst, by using consistent terminology and providing a more useful estimate, is less open to unjustified criticism in any sort of after action review.

The point is that appropriately using confidence combined with a WEP allows an analyst to make the best call with the facts he or she has at the time yet still send a signal to the decisionmaker about the firmness of the estimate without having to resort to useless waffle-words. It is a better system. It is better because it is clearer. It is better because it is consistent. It is better because it stands up to after-action scrutiny. It seems to be what the IC has in mind on page 5 but it is clearly not what the IC is doing (at least not with its most recent public NIEs).

### **The Problem With “If”**

So, “could” doesn't work. Nor does “may”, “might” and “possible” (If I had a nickel for every time a decisionmaker has said to me, “Son, anything is possible”, I would be wealthy). Even the only occasionally used “we cannot dismiss” or “hard pressed” create such a strong sense of a lack of definition that analysts should restrict or eliminate them as well from their vocabulary. What’s more, they are all unnecessary if the guidelines laid down in the Explanation Of Estimative Language – the Page 5 of the title – are followed more closely. What, then, is the problem with “if” and the other words on [the list](#)? Consider this statement from the recent [Iran National Intelligence Estimate \(NIE\)](#):

- *We assess with high confidence that Iran has the scientific, technical and industrial capacity eventually to produce nuclear weapons if it decides to do so.*

Lots of problems here, of course: The [use of a statement of confidence without a corresponding Word of Estimative Probability](#), the use of the word “eventually” (“Hell, son, the world will come to an end...eventually.” Another one I could have funded my retirement with). The “if” clause is particularly problematic, though. "If" clauses have a tendency to beg the real question. What is the real question here? Isn't it “Will Iran decide to build a nuclear weapon or not?” That is a much more important and interesting question than the question this sentence actually answers concerning the scientific, technical and industrial capacity of Iran. It is sort of like your doctor coming in and saying, “We assess with high confidence that eventually you will not be able to drive your car, if you have cancer.” Glad to hear it, Doc, but can you elaborate on that last part a bit...

“Unless” and “Should” clauses used like “if” are equally worrisome. Consider these two sentences, the first from the [Global Terror NIE](#) and the second from the [2nd Iraq Stability NIE](#) :

- *Should al-Zarqawi continue to evade capture and scale back attacks against Muslims, we assess he could broaden his popular appeal and present a global threat.*

And

- *Broadly accepted political compromises required for sustained security, long-term political progress, and economic development are unlikely to emerge unless there is a fundamental shift in the factors driving Iraqi political and security developments.*

In the first instance, the unanswered intelligence question is whether or not Zarqawi will scale back his attacks. In the second, the real question is whether there is likely to be the fundamental shift that the IC has identified as necessary. Admittedly, both questions contain elements that are probably outside of the NICs purview. In the first instance, the issue of whether or not Zarqawi will continue to evade capture falls largely within the realm of those charged with hunting him and going beyond this carefully phrased clause might somehow jeopardize those operations. In the second case it is less clear if the "fundamental shift in factors" is a euphemism for the potential results of planned US and allied action or not. The IC is, I think, rightly cautious about commenting on the possible success or failure of US plans. While the IC is well aware, in general, of the capabilities and limitations of the US government, it spends most of its time and energy focused externally, on threats to and opportunities for the United States. It is not and should not try to also be the expert in *applying* diplomatic, informational, military or economic pressure outside of the narrow bounds traditionally labeled "covert action"

[\(and maybe not there either...\)](#).

Despite this, there are clear intelligence questions here that have gone unanswered through the use of "should" and "unless". Is Zarqawi likely to scale back his attacks or not? Do the factors driving Iraqi political and security developments that are *independent* of US action likely favor the broadly accepted political compromises deemed necessary? It seems clear that, using the guidance from the EEL page, the IC could make these type estimates more useful to decisionmakers.

Not all “if” clauses are awful, though. There are some, like this one from the [Iran NIE](#), “Barring such acquisitions, if Iran wants to have nuclear weapons it would need to produce sufficient amounts of fissile material indigenously—which we judge with high confidence it has not yet done” where the analysis actually answers the question implied by the “if” clause. Therefore, in computing the percentages in the table, I only included “if” clauses that fit the “waffle-word” category.

## One More Thing

The other thing that changed within the form of the NIE (at least with regard to the form of the publicly available Key Judgments) with the release of 2007’s [Iran NIE](#) is the nature of the Scope Note (see page 4 of the Iran NIE).

Prior to the Iran NIE, the Scope Note was either a list of additional analytic cautions or was not released at all. The Iran NIE, as with many of the other factors outlined in the previous 10 parts of this series, changed all that. The Scope Note still contains some “administrative” data and additional caveats but it is now primarily concerned with the specific questions the Intelligence Community (IC) has been asked to answer and with some of the assumptions it has made in the preparation of the document. These were likely taken from a formal [Terms of Reference document](#). This document normally precedes the creation of an NIE and it tells the analysts in the National Intelligence Council (NIC), in broad terms, what questions they are supposed to answer. As the NIC puts it in the prefatory comments to the Iran NIE: “The TOR defines the key estimative questions, determines drafting responsibilities, and sets the drafting and publication schedule.”

The Scope Note from the Iran NIE asked five questions:

- What are Iran’s intentions toward developing nuclear weapons?
- What domestic factors affect Iran’s decisionmaking on whether to develop nuclear weapons?
- What external factors affect Iran’s decisionmaking on whether to develop nuclear weapons?

- What is the range of potential Iranian actions concerning the development of nuclear weapons, and the decisive factors that would lead Iran to choose one course of action over another?
- What is Iran's current and projected capability to develop nuclear weapons? What are our key assumptions, and Iran's key chokepoints/vulnerabilities?

If these are the questions, what then are the answers? Take the first question, for example: "What are Iran's intentions toward developing nuclear weapons?" Read through the NIE yourself. Where is the first question clearly and unambiguously answered? Is this the answer: "...we also assess with moderate-to-high confidence that Tehran at a minimum is keeping open the option to develop nuclear weapons." If so, it is not much of an answer. "[A]t a minimum is keeping open the option..." sounds not only vague but also borders on just plain common sense. Maybe this is the answer: "We do not have sufficient intelligence to judge confidently whether Tehran is willing to maintain the halt of its nuclear weapons program indefinitely while it weighs its options, or whether it will or already has set specific deadlines or criteria that will prompt it to restart the program." I may be wrong but that sounds to me like, "We don't know" and, I would argue, that saying so up front and clearly (instead of in the middle of the Key Judgments) would have significantly changed the tone and content of the post-release discussion concerning this estimate.

Some of the other questions suffer from the same lack of a clear answer while the form of the Key Judgments makes finding the answers to these questions as difficult as possible. Search the document for the words "intent" or "intention". *Outside the title and the Scope Note these words are never used again.* Search for "factor" or "domestic" or "external". Wouldn't you expect these words, so prominent in the questions the decisionmakers asked, to be somewhere mentioned in the Key Judgments? Wouldn't the use of these words signal to the decisionmakers that were reading this document that "here is the answer" to the questions they asked? Yes, of course, the sophisticated readers for whom these NIEs are primarily written can figure this all out themselves, but why should they have to? What fundamental intelligence principle is being abandoned by making the relationship between the question and the answer clearer? If you are going to state up front that there are five questions to be answered, what then is wrong with organizing your answers around those five questions? Doesn't it make way too much sense to say, in response to the first question, something like, "With X degree of confidence we assess that Iran's intentions towards developing nuclear weapons likely are..."? Such a structure makes it clear what question is being answered and follows the guidelines laid down on page 5 of this same estimate.

I am not suggesting that the Intelligence Community (IC) turn into an "answer service." I strongly believe that the IC has an obligation to not only answer the questions it has been asked but also to address those questions people should be asking. I think it is the IC's duty to look broadly, deeply, at these questions; to get at the nuance that only their

expertise allows. That said, you still need to answer the question. Clearly. And if the answer is “I don’t know” then say so up front.

### **Final Thoughts**

The [Pontiac Solstice](#), when it came out last year, marked a significant change in the way most people think about the Pontiac brand. The picture below, taken from the Wikimedia Commons, does not do the car justice. If you haven't seen one, go to the [Solstice website](#) or, even better, park next to one and get out and take a look. If you like automobiles at all, it is hard not to like the look of the Solstice. More importantly, the Solstice was something that no one could imagine coming out of the stodgy and decidedly old-fashioned workshops at Pontiac. It was revolutionary.



[Image: Pontiac-Solstice-GXP-DC.jpg - Wikimedia Commons](#) via [kwout](#)

It did not take long, however, before the [automobile critics got the car](#) and tore it apart. They were not kind. It had a noisy engine, interior styling was poor, its ragtop was hard to work with and the reliability of the car (based on past Pontiac performance) was expected to be much worse than for other sports cars. My guess is the critics figured that anything that looked that good on the outside needed to be as good on the inside as well.

The parallel between the earlier parts of this paper is undeniable. What the Intelligence community has done with the [Iran National Intelligence Estimate \(NIE\)](#) is unquestionably revolutionary. The process of taking what was likely a Top Secret codeword document and revising it to an unclassified version for the world to see is, by itself, extremely difficult. To complicate matters by then requiring the IC to come up with [a one-page explanation](#) of what amounts to the IC's current theory of the intelligence estimate seems, almost, to ask too much of the system.

Revolutions are not linear, however, they are iterative. Washington needed Valley Forge before he could have Yorktown, physics needed Newton before it could have Einstein and I am sure the Pontiac designers are working to fix any of the criticisms they consider legitimate as well. The distance covered from previous NIEs to the Iran NIE is massive but, as this analysis suggests, there is more that should be considered. Specifically:

- Revamp the [Explanation of Estimative Language \(EEL\) page](#), particularly the section on [analytic confidence](#).
- Take advantage of the theory already articulated to make estimates clearer and more nuanced. To put it more simply: Actually do what you said you were going to do on Page 5.
- Organize the Key Judgments around [the questions asked in the Scope Note](#) while remaining unafraid to answer the questions that should have been asked.

The decision to make the Key Judgments from at least some of the NIEs public had to have been difficult but the benefits are tangible. Not only does it inform the electorate, it prevents the elected from ignoring inconvenient assessments. In a day and age where massive information flows threaten to swallow us all, it makes intelligence and the intelligence community that produces it more relevant, not less. While there is clearly work still left to be done, the IC has accomplished much in a very short time. The revolution has begun; long live the revolution!

## Epilogue

One of the reasons I decided to post this "article" originally as a series on my blog, [Sources And Methods](#), was to experiment with the blog format; to see how it might work (or not) with more academic style articles. The purpose of this epilogue is to discuss what I have learned through this process.

First, though, I want to thank all of the people who took the time to comment on the blog or to drop me a line. The responses, even when they took exception to my findings, were overwhelmingly positive regarding this "experiment".

If this was an experiment, what, then, were the results? I will start by laying out some of the facts and then discuss what I think they mean in the context of academic publication and scholarship.

My blog, Sources And Methods, which has been around since just before Thanksgiving last year, currently gets about 1000-1500 [unique visitors](#) a week and about twice as many page views. As I understand it, "unique visitor" is a term of art that describes a "[hit](#)" from a single person and "[page views](#)" describes how many pages a unique visitor looks at before he or she departs the site. Confusingly, unique visitors can be the same person if they come back at different times. If, for example, someone hits the site, looks at 5 pages (clicks on 5 links to 5 posts), departs, comes back at a later date and looks at 3 pages, then the site has been hit by 2 unique visitors and has had 8 page views.

Clearly, given the nature of the series, the number of people who actually read any or all of the posts in the series is something well below the approximately 3000-4500 unique visitors the site had over the 2.5 weeks the series ran.

While there are all sorts of packages available, I have installed only the most basic analytics software on the site. This software allows me to know who is hitting the site and what they are reading in only the grossest possible sense. My own estimation, based on an extrapolation of the numbers I do have, is that the series had 1000-1500 unique visitors representing no fewer than 100 and no more than 300 *real live people* who read all or most of the posts in the series. It is likely that another 100-300 people read at least one part of the series over the last 2.5 weeks.

One of the main difficulties with Intelligence Studies as an academic discipline is that there are relatively few journals in it. Moreover, since [the economics of journal publishing](#) are driven more by subscriptions than the popularity of the articles in the journal, comparing the number of readers from journal to journal and from discipline to discipline is fraught with difficulty.

That said, I have tracked down two interesting numbers for comparison purposes. The first indicates that journal articles [in the British Medical Journal average 1168 hits](#) (not all of which will be unique visitors) per article in the week after publication. The second, [from the British Library](#), indicates that the average number of readers *per annum* of an average journal article ranges from 500-1500 with an average of 900 (this presumably includes people who will read only part of the article).

I was, frankly, pretty surprised to see these comparison figures and it suggests that the way forward within the intelligence studies discipline is with online journal publishing. If I can get roughly the same number of hits (largely from professionals in the discipline) with this modest effort as the British Medical Journal reaches over generally the same time period and roughly the same number of readers in 2.5 weeks that the lesser read (but far more widely distributed) journal articles analyzed by the British Library get in a year, I think it indicates a high comfort level from people in the profession with the electronic distribution of scholarship.

Beyond the question of readership there is also the more important question of scholarship. This is much more difficult to get at by looking at the numbers, however. On the face of it, the series falls well within normal limits for journal articles. Putting all the pieces together adds up to about 9000 total words which would, with charts, graphs and bibliographies add up to a respectably substantial journal article (about 30-40 pages depending on the journal). This is far longer than mathematics articles ([which average about 12 pages](#)) and far shorter than law review articles ([which have recently begun to impose page limits in order to bring down the number of pages to 70 or so...](#)). [A quick review of page lengths in Intelligence and National Security](#) suggests that 30-40 pages is within the range of "normal" for that publication.

Likewise the methodology and collection of the data were well within the norm for academic articles. I took a discrete but logically connected subset of National Intelligence Estimates and analyzed the way in which they were written, looking for patterns that emerged from the data analysis. The results are easily open to verification - anyone else can do the same thing I did -- and the documents analyzed were all primary sources. I also tried to indicate where I saw weaknesses in my method and why I thought I could still make the evaluation I was making.

I also tried to be suitably "academic" in the tone of the article. I think I largely succeeded while noting an occasional descent into "blog-speak". Many of the readers of this series of posts are students at Mercyhurst College and I wanted to make the series as interesting as possible. Having read many academic articles over the years, I also recognize that the pure academic tone is certainly not required...

Citing sources proved particularly easy with this form of publication. My intent was to turn my endnotes into hyperlinks within the posts. The paper contains 75 hyperlinks to

sources outside of the document. In a print journal, all of these would have to be endnotes. I am not entirely satisfied with this method for sourcing, however. For one thing, the hyperlink cannot take the reader to the exact place in a lengthy document to which the post refers. I think if I do such an experiment again (and I think I am likely to), I will include the page number in a parenthetical immediately after the hyperlink. While this article was fairly easy to write without reference to non-web-based sources, I expect that this will not always be the case. I had planned to just include an endnote and put it at the bottom of each post if I had to refer to something that was not on the web but, thanks to the [DNI](#) and the [CIA Center for the Study of Intelligence](#), all of the major references were readily available.

The fundamental element of traditional academic scholarship that was missing from the process was [peer review](#) *prior* to publication. I would make three comments here. First, [the problems with the peer review system](#) are well known to any academic. Some have gone as far [as to claim](#) that it is less a system for determining quality than it is a system for enforcing acceptability. Second, the notion of what constitutes adequate [peer review is changing dramatically](#) with any number of experiments on-going. Finally, the ability to comment that is provided by blogging technology changes and adds both depth and nuance to traditional notions of peer review.

Consider the traditional process. An article goes in and it is assigned to various referees who make independent and anonymous reviews of the work prior to publication. The readers rarely get any insight into reviewer comments or questions. Comments from the readers likewise have to go back to the editors and may or may not show up in a later issue of the journal. The best indication of the quality of an article is likely the number of times it is cited in other works -- something that is not known for years after the article is published.

With blogging technology, the peer review process becomes an integral part of the writing process. It happens simultaneously, in more or less real time. A variety of different metrics (including the ones discussed above) are more or less immediately available.

All in all, the process of writing this article and posting it as a series on a blog was extremely gratifying. I enjoyed the research, writing and review processes much more than I do normally.

Again, thank you all for all of your comments. It was genuinely appreciated.