



Analysts' judgement of probability

One of the most difficult tasks of an analyst is to convey his/her level of certainty that something will happen ... or not happen. There are various factors that play a role in this important step: the complexity of the intelligence problem, decision-makers' unrealistic belief that intelligence equals evidence, politicisation of intelligence where the analysts

are expected to prove or support a political agenda, an organisational culture that forces early judgement on weak signals, the analyst's own inability to verbalise his subjective judgement or the fear of being wrong. In countries where English is the first language, analysts find it easier to make a distinction between "likely" and "probably" than those for

whom English is a 2nd or 3rd language. For the latter, opting for the easier word increases the possibility that the analyst will convey a message that the decision-maker will misunderstand.

A lot have been written and said about this topic. Here are a few perspectives. Click on the links to access the web documents.

From the movies

From [Fair Game](#) (2010):

Paul: One point about intelligence, nothing is 100 %.

Libby: So, what, are you 99 % sure? 98 %?

Paul: I'm saying that you can't put an exact figure on it. I'm saying that...

Libby: But if you had to say?

Paul: You cannot be that precise.

Libby: Could you say you're 97 % sure? Is there a 3 % chance you've got this wrong? Or four or five? Still pretty good odds. Do you like those odds, Paul? Are you willing to put your name to that? Ready to make that call?

Paul: I don't make that call, sir.

Libby: Yes, you do, Paul. **Each time you interpret a piece of data. Each time you choose a maybe over a perhaps you make a call, a decision. Right now you're making a lot of little decisions adding up to a big decision.** But what if there's only a 1 % chance that you're wrong? Can you say for sure that you'll take that chance and state as a fact that this equipment is not intended for a nuclear weapons program? Do you know what 1 % of the population of this country is?

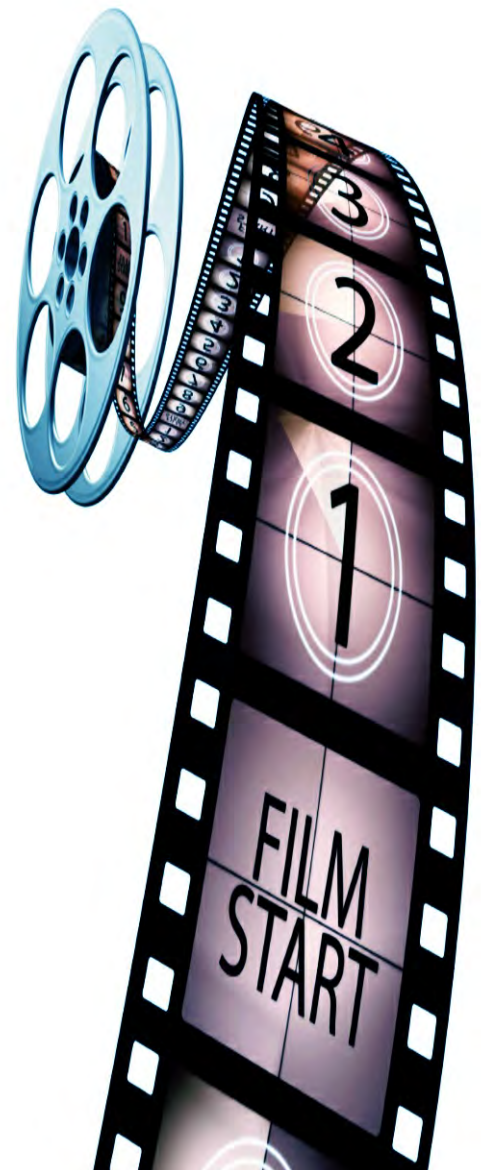
Paul: It's 3,240,000 souls. Okay, sir. Look, we're not machines. We look at the evidence. We game it out. And believe it or not, not everybody agrees all the time. It's a process.

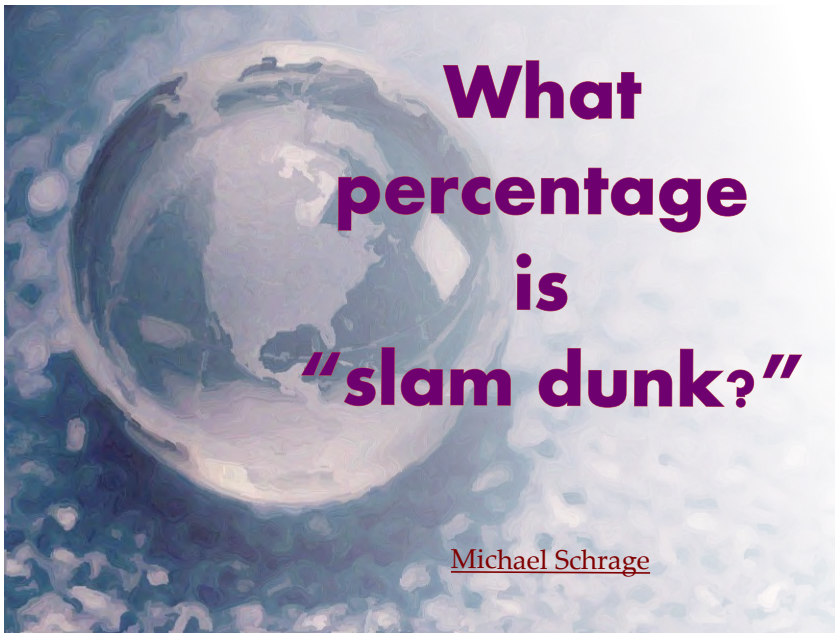
Libby: It's a process.

Paul: Yes.

Libby: And not everyone agrees.

Paul: Exactly.





Kris Weaton:

“As analysts, they have an obligation to communicate as effectively as possible the results of their intelligence analysis to decision makers. ... there is not yet a perfect way to do this; there is only a best practice that tries to balance the competing concerns.”

US NIE on Iran 2007

Estimates of Likelihood. Because analytical judgments are not certain, we use probabilistic language to reflect the Community’s estimates of the likelihood of developments or events. Terms such as *probably, likely, very likely, or almost certainly* indicate a greater than even chance. The terms *unlikely* and *remote* indicate a less than even chance that an event will occur; they do not imply that an event will not occur. Terms such as *might* or *may* reflect situations in which we are unable to assess the likelihood, generally because relevant information is unavailable, sketchy, or fragmented. Terms such as *we cannot dismiss, we cannot rule out, or we cannot discount* reflect an unlikely, improbable, or remote event whose consequences are such that it warrants mentioning. The chart provides a rough idea of the relationship of some of these terms to each other.

Remote	Very Unlikely	Unlikely	Even chance	Probably/	Likely	Very likely
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Although Sherman Kent’s efforts to quantify what were essentially qualitative judgments did not prevail, the essay’s general theme remains important today.

Phillip Fellman

“This is all just scientific window dressing. There is plenty of smoke, but we are never shown what is behind the mirrors. This isn’t science, it’s the art of advocacy, precisely what the original National Intelligence Estimates and estimative process was designed to eliminate. In this context, the product displayed here is exactly the opposite of a scientific estimate. The scale of judgments from Remote to Almost Certainly is simply a modification of the 5 point Likert scale, a simple ordinal measure of typically anecdotal probability developed to aid research in the field of psychology in 1932.”

The UK Ministry of Defence
Probability scale



Description	Probability range
Will	Greater than 90%
Likely/probably	Between 60% and 90%
May/possibly	Between 10% and 60%
Unlikely/Improbable	Less than 10%

Nathan Dieckmann

“Consumers perceived forecasts with numerical estimates of likelihood and potential harm as more useful than forecasts with only a narrative evidence summary.

However, consumer's risk and likelihood perceptions were more greatly affected by the narrative evidence summary than the stated likelihood information.

These results show that even "precise" numerical estimates of likelihood are not necessarily evaluable by consumers and that perceptions of likelihood are affected by supporting narrative information.

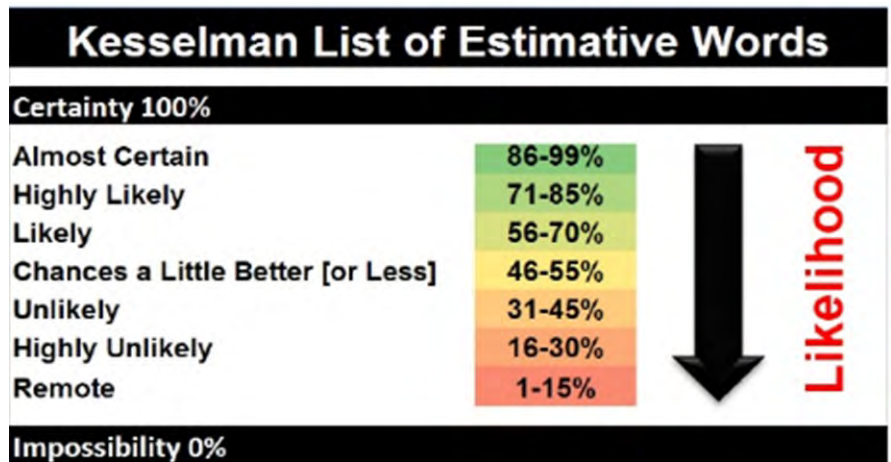
Numeracy also moderated the effects of stated likelihood and the narrative evidence summary. Consumers higher in numeracy were more likely to use the stated likelihood information and consumers lower in numeracy were more likely to use the narrative evidence to inform their judgments.

The moderating effect of likelihood format and consumer's perceptions of forecasts in hindsight are also explored. Explicit estimates of uncertainty are not necessarily useful to all intelligence consumers, particularly when presented with supporting narrative evidence.

How consumers respond to intelligence forecasts depends on the :

- structure of any supporting narrative information,
- the format of the explicit uncertainty information, and
- the numerical ability of the individual consumer.

Forecasters should be sensitive to these three issues when presenting forecasts to consumers.”



RACHEL F. KESSELMAN

“While the Kesselman List of Estimative Words will likely be tweaked by others in the community, it is a step in the right direction. Analysts have an obligation to communicate as effectively as they can the results of their estimates. The best case scenario is that the NIC and the IC take into consideration this new estimative scale above and produce several more iterations of their own list until employees of the community can come to agreement on a set of clear-cut words that all are both willing to accept and employ in daily practice.”

Michael Schrage

“The simplest, easiest, cheapest and most powerful way to transform the quality of intelligence would be to insist that analysts attach two little numbers to every report they file.

The first number would state their confidence in the quality of the evidence they've used for their analysis: 0.1 would be the lowest level of personal/professional confidence; 1.0 would be -- former CIA director George Tenet should pardon the expression -- a "slam dunk," an absolute certainty.

The second number would represent the analyst's own confidence in his or her conclusions. Is the analyst 0.5 -- the "courage of a coin toss" confident -- or a bolder 0.75 confident in his or her analysis? Or is the evidence and environment so befogged with uncertainty that the best analysts can offer the National Security Council is a 0.3 level of confidence?

These two little numbers would provoke intelligence analysts and intelligence consumers alike to think extra hard about analytical quality, creativity and accountability.”