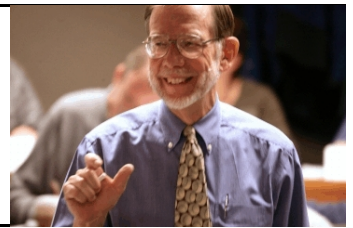


Bob

Behn's Performance Leadership Report

An occasional (and maybe even insightful) examination of the issues, dilemmas, challenges, and opportunities for improving performance and producing real results in public agencies.



On why all public officials need to appreciate how

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Assumptions Drive Conclusions

Each year, the folks at **Improbable Research** recognize several scientific publications that “first make people laugh, and then make them think.” This year, on the 20th anniversary of the **Ig Noble Prize**, Improbable Research (unconstrained by some dead white guy’s preestablished categories) gave its first award in “Management.”

Alessandro Pluchino, Andrea Rapisarda, and Cesare Garofalo, from the Department of Physics and Astronomy at the Università di Catania, won an Ig Noble for their article, “**The Peter Principle Revisited: A Computational Study.**”

Even if you weren’t alive in 1969, when Laurence Peter published *The Peter Principle*, you know the concept: “In a hierarchy every employee tends to rise to his level of incompetence.” Anyone who has worked in a hierarchy can offer at least one example.

So why, 40 years later, did Pluchino, Rapisarda, and Garofalo deserve a prize? Whimsy is part of the answer. After all, the Ig Noble awards “are intended to celebrate the unusual, honor the imaginative—and spur people’s interest in science, medicine, and technology.”

Noting that “common sense, in many areas of our everyday life, often deceives us,” these three physicists reached a remarkable conclusion:

“We obtained the counterintuitive result that the best strategies for improving, or at least for not diminishing, the efficiency of an organization, *when one ignores the actual mechanism of competence transmission*, [emphasis added] are those of promoting an agent at random or of randomly alternating the promotion of the best and the worst members.” Why waste time trying to figure out who actually has the skills to do the job? Just flip a coin.

Impressive, huh! Indeed, this management article, in the February 2010 issue of *Physica A: Statistical Mechanics and Its Applications*, had already generated attention from MIT’s *Technology Review* and *The New York*

Times Magazine, plus various blogs.

Since then, the **Dilberts** of the world have been chortling. They always knew that they would be better off reporting to a random colleague than to their current, pointy-haired boss. Yet who has actually read this article? Anyone who does might notice something. Something that can only be described as a predestining assumption: “The competence [of promoted individuals] at the new level in the hierarchical structure does not depend on the competence they had at the previous level.”

The authors derived this assumption from “the simple observation that a new position in the organization requires different work skills for effectively performing the new task ([which is] often completely different from the

Every mathematical model requires assumptions. No one can model something as complex as an organization without making assumptions. Yet those assumptions can effect the conclusion. Indeed, those assumptions can predestine the conclusion.

previous one).” Thus, they assumed “that the competence of a member at the new level could not be correlated to that at the old one.”

This “simple observation” comes with no empirical data. Apparently, the authors used common sense.

Indeed, this article lacks any evidence from any organization. The authors are mathematical modelers. So, rather than collect any organizational data, they made a few simplifying assumptions, created a simulation model, and ran it fifty times.

Still, the authors claim to be quite familiar with how organizations behave. “Common sense has always been widely used in any hierarchical organization to manage the system of promotions,” they write. Moreover, this common sense “tells us that a

member who is competent at a given level will be competent also at a higher level of the hierarchy.”

Still, “common sense,” these same authors note, “often deceives us.”

So can mathematical models. Indeed, what can be more deceiving than the simplifying assumptions in any mathematical model?

Such assumptions are necessary. It is impossible to fully model any individual’s behavior—let alone the behavior of many people working in an organization. Assumptions make the mathematics feasible. And, in this article, the authors do present their assumptions clearly.

Once those assumptions are made, however, everything is downhill. The conclusion is inevitable: If every applicant’s accumulation of past competences has zero relevance for the next job, flipping a coin makes sense.

Yet, suppose you modify this critical assumption. Suppose the organization’s leadership had developed a sophisticated appreciation of the skills and talents needed by different people with different responsibilities. Suppose that the organization also created a training strategy to develop those skills and talents so that, when it came time to fill a position, there existed several people within the organization who had the requisite skills. Damn. The mathematics just became much more complex.

Every analysis—not just mathematical simulations—depends upon assumptions. Indeed, the assumptions that analysts make can predestine their conclusions. So, before you ever look at the conclusions derived from some mathematical model, first check the assumptions. **B**

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