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Luck – The Brilliant Randomness in Management



*Luck or lucky circumstances largely explain the differences in performance of individuals and companies, but only 2 percent of all papers on management research explicitly mention “luck” or “lucky circumstances”. However, this does not mean that management research disregards the meaning of lucky circumstances, writes Prof. Dr. **Chengwei LIU**, Associate Professor of Strategy and Behavioral Science at ESMT Berlin.*

Why are some individuals or firms more successful than others? To this question – arguably a central enquiry in management scholarship – one finds various explanations. Many management scholars have explicitly referenced luck as an explanation for performance differences. Yet such references remain the exception rather than the rule: a review of the use of luck in leading management journals suggests that only 2 percent of articles included the word “luck” in the main text, abstract or title. And the reasons for this may not be hard to find. After all, how is one to operationalize – let alone draw practical implications from – something as, well, fickle and haphazard as luck?

To not have referenced luck explicitly does not also mean that management researchers have discounted its importance. Occasionally they have used alternative constructs to acknowledge something quite similar. Where luck is referenced, its meaning can vary widely. For some, it is the unexplained variances that lack pragmatic value. As Barney writes: What prescriptive advice can we give to managers given that the role of luck is important, “that they should ‘be lucky’?” For others, luck is essential for explaining performance differences because randomness in structured environments can produce systematic patterns. Still others argue that while good and bad luck can happen to anyone, some are more prepared than others, for example, by being mindful enough to rebound from bad luck, or by securing a higher “return on luck”. Some even argue that the ways others mistake luck for skill can signal profitable opportunities.

The primary purpose of this paper is to elaborate on two most salient perspectives of luck in explaining performance differences: luck as randomness and luck as counterfactual. A common theme of these two perspectives is that exceptional performances often occur in exceptional circumstances. Small differences triggered by randomness can be augmented over time due to various reinforcing mechanisms and produce extreme successes. These outliers appear to be very impressive but they could be not so successful if history is rerun. That is, they are unlikely to get lucky initially again in counterfactual worlds and their eventual performances can be very different from the one we observed in reality. Unfortunately, people often fail to consider how events could have unfolded differently and may reward (or punish) people for their good (or bad) luck.

Luck as Randomness

Management scholars have highlighted the random nature of behaviours in organisations and management. Even if people have intentions and make conscious (or non-random) choices based on these intentions, studies show that outcomes can still appear to be dominated by random processes. Below we discuss three main sources of randomness in organisations. While these contributions are not directly connected, the recurrent theme of how randomness in structured environments can produce systematic patterns qualifies a “random school of thought in management”.

The main sources of random in companies are:

1. Organisational outcomes appear random partly because outcomes are influenced by external events that managers have little control over. Corporate success is influenced by the activities of competitors, the government, and by external events such as fluctuations in exchange rates. A series of seminal studies on sources of variance in corporate profitability illustrate the importance of events beyond managerial control. Significantly, they find that as much as half of variations in performance cannot be explained by firm or industry attributes. The unexplained proportion of variance is larger, in most studies, than the proportion of variance explained by any single factor. A meta study shows that the unexplained proportion is higher than the sum of the variance accounted for by all other factors. This implies that much of the variance in profitability cannot be explained by the factors that tend to be the foci in strategy textbooks.
2. The outcome of carefully planned behaviour would appear to be random if choices were based on inaccurate forecasts or on an incomplete understanding of means-ends connections. Forecast inaccuracy limits how much theories that emphasize persistent firm differences can explain. If demand changes in ways that are difficult to forecast, profitability will only be weakly persistent, even if firm capabilities or costs are highly persistent. Forecast inaccuracy also partly explains why firm growth is nearly random. Capable but unlucky firms who bet on the wrong product will not grow, while firms with weak capabilities who happen to bet on the right products will, and this explains why growth rates are almost random.
3. The outcome of organisational decisions may appear random when events are decoupled from the intentions of those who are supposed to be in charge, and this will remain the case even in stable and predictable environments. Managers have less control over important determinants of competitive advantage, such as culture and capabilities, than generally thought. Managers may choose wisely among alternative strategies, but the strategy that is implemented may be very different from their initial intent. Finally, people in organisations make random errors that can have significant effects. For example, two Harvard economists dramatically exaggerated the negative impacts of a high debt ratio on GDP growth. They later acknowledged a

mistake with the Excel coding they used which had “averaged cells in lines 30 to 44 instead of lines 30 to 49”, excluding five countries from the analysis. Millions of people's lives were impacted due to austerity measures justified by this research.

Luck as Counterfactual

Several management scholars have broadened the application of luck by including consideration of counterfactuals. Thus, an event can be considered to be a matter of luck if it only happens in the realized world but not in most possible counterfactual worlds. That is, realized history is not necessarily efficient and can be considered as drawn from a pot of possible histories. If one could rerun the draw, how likely is it that an alternative history to that realized could be obtained? If counterfactual simulations show that the realized history is, in fact, an unlikely outlier in the distribution of possible histories, what actually happened can be considered to be luck.

Consider an example popularized by Malcolm Gladwell: Ice hockey is easily the most popular professional sport in Canada. Many Canadian children aspire to become a professional hockey player, but how can this be achieved? Research has found a robust empirical regularity in the profile of Canadian professional hockey players: In every elite group of hockey players studied, at least 40 percent were born between January and March. This regularity seems to suggest that those born between January and March are more talented at playing hockey than the others and the secret of becoming a professional hockey player in Canada lies in birth dates. This example is actually quite a useful illustration of how luck is amplified by path dependency. High performers from each age group of hockey-playing Canadian children are selected and groomed for inclusion at the next level. But there is a rule: The cut-off age for each new hockey league is the 1st of January. This means that those who are born in the first three months are older and likely to have greater physical maturity than their peers in the same age class. They are more likely to be chosen to play more often and at higher levels, where they will have better teammates, better training, and more game experience. Their advantage is not so much that they are innately better at hockey, but only that they are older and stronger. Nevertheless, after a few years of this selection process and the advantages that come from it, the players who are born in the first three months will likely end up being better than their peers who may have had the potential to have been as good or better.

In the aforementioned example, situational factors such as chance (in this case the birth date of Canadian children) and context (selection and training in Canadian hockey leagues) are likely to play more important roles than skill in determining who ends up becoming a professional hockey player. Both elements of chance and context are beyond the foresight and control of Canadian children (but not their parents, of course, who have a reasonable expectation of being able to plan the child's conception). The initial slight difference in birth dates, and thus physical maturity, can be augmented in a path-dependent process and produce huge differences in eventual outcomes. This is occasionally referred to as a “relative age effect”. If history could be rerun with slight difference in the initial condition (e.g., the age cut-off point is 1st of July instead), it is sensible to predict that a large fraction of the current professional hockey players would have had to settle in different career paths.

The aforementioned example suggests that luck can have enduring effects in determining performance differences. The slight advantage gained due to factors beyond one's control is usually augmented in a path-dependent, rich-get-richer process, i. e., a “Matthew Effect”. Exceptional performances may have little to do with initial levels of skill, but

merely reflect contexts where rich-get-richer dynamics are stronger. Similar processes have been documented in a variety of research and they all suggest that the eventual performance distribution can reflect an exaggerated or even distorted initial skill or quality distribution due to luck. Exceptional performers in these contexts should not necessarily impress us because the winners are likely to have enjoyed early luck of the draw and differences can be seen between alternative histories.

However, people's perceptions do not necessarily reflect the role of luck for at least two reasons. The first arises from the challenges involved in gaining the materials that are necessary for constructing alternative histories. Perfect counterfactual analysis is impossible if one cannot specify all of the initial conditions that could have altered the course of history. This constraint makes counterfactual analysis less practical. The second reason is due to the way people construct alternative histories in retrospect. Consistent with hindsight bias, the realized history is more salient than others, making people's counterfactual imagination anchor in it and underestimate how histories could have unfolded differently. Instead of mentally simulating possible counterfactual histories, people create positive or affirming stories that emphasize how human intention and intellect trump uncertainty and difficulty. These positive stories offer their tellers and audiences a sense of identity and practical lessons for future actions, despite the fact that they may not provide the best reflection of what might have been: "A good story is often less probable than a less satisfactory one." These human-centric stories "can be seen as possibly reflecting elements of human conceit about the role of human intention and intellect in human behaviours". As a result, people often overestimate the role of skill and underestimate the role of luck in their counterfactual imaginations, mistaking luck for skill.

Concluding Remarks

These two prominent perspectives of luck in the management literature suggest that misperceptions of luck are most problematic when evaluating exceptional performances. Research suggests that top performances can indicate luck and lower levels of skill because extreme performances are more likely to result from extreme circumstances. This is particularly true for corporate stars whose skill does not differ much and their outcomes are largely determined by situational factors. Nevertheless, corporate stars and their performances tend to attract media attention, and many conclude that these outliers must have done something right to achieve their status. This discrepancy contributes to various problems, in particular increased social inequality and endangering the belief in a just world.

What is the implication of luck for management education? Misperceptions of luck, particularly when evaluating exceptional successes, have important implications for how we educate the next generation of managers. Many bestsellers in management and case studies in business school education focus on the top performers and how to move from "good to great". As these perspectives on luck suggest, there are no rules for becoming the richest and luck dominates the outcome beyond a certain level. This implies that preaching how to move from good to great is likely to lead to disappointment or even encourage excessive risk taking, fraud even, because exceptional performances are unlikely to be achieved otherwise. Instead, management research and education should focus more on less extreme performances, i. e., the second best, and strive to increase learning from failures, where skill and effort matter more in determining outcomes.

Management professors should stop showing our students how a limited number of stars have risen to levels that others are unlikely to achieve. Rather we should present more realistic and potentially beneficial lessons such as how people can move from incompetent to okay.



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