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FÜHRUNG + ORGANISATION

Leadership by Lot

Lots of Luck
How random in management delivers brilliant results

Random Selection of Professors
The historical example of the University of Basel

People's Representative by Lot
Suggestions for lottery in politics

Random Selection Today
Four reasons for the use of lottery

CEO by Lot
A means against hubris of top managers?

Female Leader by Lot
How to appoint more women to top positions

Leadership Experiments
How discoveries by chance enable progress

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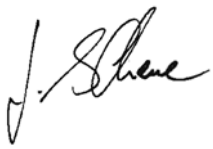
The random mechanism: a new paradigm for better decisions

With this issue the zfo entered new grounds in several respects. On the one hand, this issue comprises only contributions to the main topic. This hasn't been a deliberately planned decision, but a rather "random" one since we have received so many excellent contributions on this subject. We have to admit though, that we helped chance happen a little bit. We managed to commit our colleagues Margit Osterloh and Katja Rost from the University of Zurich (UZH), two renowned researchers who acquired and thematically focused the individual contributions. Resulting in an issue that approaches the main topic so comprehensively as hardly any issue of the zfo before. The editorial board of the zfo would like to thank Margit Osterloh and Katja Rost sincerely for dealing so successfully with the subject.

On the other hand, we step on new grounds by "saying goodbye" to the widely practiced paradigm in management circles that says that decisions always have to be comprehensively and well prepared, and that you (should) decide for the alternative that can be expected to produce the best possible results for reaching your goals. In the past, we published manifold insights that follow this classical paradigm. With the present focus we'd like to leave this paradigm behind and turn to chance in management behavior. The intention is to show that chance does play a role in management decisions that shouldn't be underestimated. In addition, it will be illustrated and explained that you should also accept a random decision deliberately, as these often result in a better outcome, because thus certain bias in the process of decision-making can be prevented.

This commitment to a random management decision shouldn't be mixed up with gambling. The random decision rather is an attempt to avoid bias within the final selection process. This is due to the fact that especially decisions with a (high) relevance for companies are also high-ranking political processes that are moderated by multifarious power relationships and interests. Especially from an external perspective it does make sense to prevent political decisions by using random mechanisms. On the other side, you also have to wonder whether decision-makers are willing to accept random decisions or to subordinate themselves to those in the first place. At this point, you particularly needed advisory bodies that will ensure for an efficient corporate governance, which means that the decision process is largely proceeding free from questions of power and individual interests.

Therefore, our readers in mind, enjoy entering new grounds in decision-making.



Gerhard Schewe

Leadership by Lot

Focal random selection as a new instrument for leadership recruitment

Chance and luck are generally considered to be irrational. The statement "This was the result of a lottery" is usually not a badge for good management. And yet random results are more common in companies than we think. In this issue, *Chengwei Liu* shows that no less than half of the variance in company results cannot be explained by factors found in management textbooks. Once we have accepted this result, the question is what is more irrational: the belief that managers in companies 'to have everything under control' or a targeted and deliberate use of random or lottery procedures in certain areas? The articles in this issue deal with these questions.

The contributions by *Hubertus Buchstein*, *Katja Rost* and *Malte Doehne* show that lotteries are not new, but have a rich history as part of a religious practice, as an expression of divine will, as a means of fighting corruption, as a stabilising mechanism in the struggle for the supremacy of competing families, or as a tool for creating equality in decision-making. As such, they were used – mostly in combination with conventional methods – for example, in ancient Athens, in the Doge's Election in Venice or in the 18th century in the election of professors at the University of Basel.

Lottery procedures have ceased to be just a historical curiosity and are now part of our everyday lives, for example, in statistical quality testing, election research or as a security check at the airport. Less well known is the fact that lottery procedures are now also playing a role in the political sphere. The contributions by *Bruno S. Frey* and *Sarah Heinzmann* show this by means of citizen forums (for example, in the case of constitutional amendments in Ireland) or the discussion about 'Aleatoric Democracy' (derived from alea, Latin for cube). Applications in the executive, legislative and international organizations could help to overcome the current 'crisis of democracy'.

The idea of 'CEO by Lot', which is presented in two contributions by *Joël Berger, Margit Osterloh* and *Katja Rost*, is completely new – but so far only in the form of a laboratory experiment. If chance unintentionally plays a major role in factual management, then it is more rational to use chance intentionally and in a controlled manner. There is hardly a better way to put a stop to the hubris of many highly acclaimed management superstars, to prevent discrimination and to mitigate the harmful effects of competition. The targeted use of random procedures means rationally acknowledging the limits of rationality.

Like *Hans A. Wüthrich* and *Petra Arenberg* show in their contributions, chance can also be integrated into decision-making behavior. In this process, it is not the lot that is actively used, but rather the fact that chance is allowed to be a reality, both in thought and in fact. Randomness is no longer dealt with as an accident, but as a source of added value, for which mental openness must be established.

We thank *Markus Sulzberger* for encouraging and supporting our research and to edit an English version of the Special Issue on 'Leadership by Lot'. We also thank *Simon Milligan* for competently translating or editing most contributions in this booklet.

We wish you a lot of stimulating reading. We hope that this booklet will contribute to reflection on the role of randomness in management and in the governance of communities.

Margit Osterloh and Katja Rost

Luck

The brilliant randomness in management

Chengwei Liu

Luck or lucky circumstances largely explain the differences in performance of individuals and companies. However, only 2 percent of all papers on management research explicitly mention 'luck' or 'lucky circumstances'. This does not mean that management research disregard the meaning of lucky circumstances.

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.[1] 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.[2] 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.[3] As Barney writes: What prescriptive advice can we give to managers given that the role of luck is important, "that they should 'be lucky'?"[4] For others, luck is essential for explaining performance differences because randomness in structured environments can produce systematic patterns.[5] 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'.[6] Some even argue that the ways others mistake luck for skill can signal profitable opportunities.[7]

> Small differences activated by hazard may increase over time and lead to extraordinary success.

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 in the realized world but they could not have been so successful if the 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 behaviors in organisations and management.[8] 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 environment can produce systematic patterns qualifies a 'random school of thought in management'[9].

> In most studies, the unexplained proportion of variance is larger than the proportion of variance explained by any single factor.

counterfactual
Latin against the facts. Something that did not happen in reality but could have happened. We constantly involve counterfactual and hypothetical conditions in our thinking. If people think counterfactually they consider alternatives to what really happens. Thinking about counterfactual possibilities can be used for verifying whether occurrances are really the results of qualification, planning and performance or whether they occurred by chance.

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.[10] Corporate success is influenced by the activities of competitors, the government, and by external events such as fluctuations in exchange rates.[11] A series of seminal studies on sources of variance in corporate profitability[12] 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.[13] 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 of other factors.[14] 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 behavior 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.[15] 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.[16]
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.[17] Managers may choose wisely among alternative strategies, but the strategy that is implemented may be very different from their initial intent.[18] 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.[19] 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"[20], 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.[21] 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.[22] That is, realized history is not necessarily efficient and can be considered as drawn from a pot of possible histories.[23] 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.

> Often the realized result is only an unlikely outlier within a range of alternative possibilities.

Consider an example popularized by Malcolm Gladwell: Ice hockey is easily the most popular professional sport in Canada.[24] 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.[25] 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.[26] 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.[27] 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,

Impulses for Practice

- The profitability of companies or the success of individuals can only be explained to a small extent by factors that are in the focus of strategy textbooks.
- Random and contextual elements that are beyond managerial influence often explain extraordinary successes better than people's actual abilities.
- Nevertheless, fortunate circumstances do not matter in most people's perceptions. On the one hand they lack knowledge, on the other hand they construct and reconstruct events in their imagination as if the greatest difficulties could be overcome with intelligence and commitment.
- Top performers have rarely done everything right, instead they were just lucky. If strategy textbooks or training programmes claim that you can derive recipes for success from management stars, this is not serious. Thus, viable and useful advice will not be imparted to the young managers.

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'[28]. 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'[29]. 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.[30] 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,[31] the realized history is more salient than others, making people's counterfactual imagination anchor in it and underestimate how histories could have unfolded differently.[32] Instead of mentally simulating possible counterfactual histories, people create positive or affirming stories that emphasize how human intention and intellect trump uncertainty and difficulty.[33] 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."[34] These human-centric stories "can be seen as possibly reflecting elements of human conceit about the role of human intention and intellect in human behaviors".[35] As a result, people often overestimate the role of skill and underestimate the role of luck in their counterfactual imaginations, mistaking luck for skill.

path dependency
is to a great extent the influence of structures, processes and measures that happened earlier and thereby cleared a new 'path'.

Matthew Effect
This term was designed by the sociologist Robert K. Merton in 1968. He used it to describe the phenomenon in academic life that well-known authors are more likely to become even more known as they are often asked to write further publications and their work is also cited more often.

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.[36] 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.[37]

> Research suggests that top performances can indicate luck and lower levels of skill.

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.[38] 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.

Abstract

Seminal contributions to management scholarship have highlighted luck as an alternative explanation for performance differences between individuals and organizations. Yet it has rarely taken center-stage in scholarship. This paper introduces two powerful approaches to conceptualize luck – luck as randomness and luck as counterfactual – and discusses its implications for management research and education.

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Random Decisions Viewed Historically

A short history of the use of lottery in governments

Hubertus Buchstein

Lottery has played an important role in the European history of ideas. Whereas in the past the will of God was thought to be manifested by lot, today lottery has the potential to produce decisions by a second-order rationality.

The Religious Origins of Lottery

Choosing by lot, or lottery, is an ancient decision-making practice whose exact historical origins lie in prehistory. We know from archaeological and historical research that lotteries were used independently in various cultures around the world. Originally, it was exclusively an integral element of religious practices: the divine will was to be revealed by lot. It was only gradually that lottery drifted away from its religious origins and was recognized as a political decision-making process free of any need for metaphysical legitimation.

This development paved the way for the use of lottery as a technique for the artificial production of random decisions.[1] Behind the concept of randomness is the idea of statistical probability, and thus, the exclusion of human and other causal influences (cf. Chengwei Lui's contribution).

Despite this fundamental difference in the purpose of lottery, some of the early applications of lottery procedures for political decision-making and governmental activities can inspire contemporary discussion.

Divine Decisions

In the oldest lottery technique known to today's archaeologists, one or more bones, called a *talus*, were thrown on the ground and their positions observed. The Sumerians, the first known high culture of the third millennium BC, made use of such practices. From the Sumerians and Assyrians, the *talus* found its way to theocratic Egypt, where it was used to select sacred high officials and temple servants by lot. The earliest evidence for the use of such throws in governmental practices comes from the Assyrian empire; some sources report that in 833 BC the prestigious name-givers for the new year were drawn by lot. Lottery was also part of the Nordic mythological world; in the *Edda*, wooden sticks were drawn to show who among the hard-drinking gods should die. Tacitus described the Germanic practice of drawing lots for plots of farming land for the year, and Caesar reports that the Germans determined the most propitious day for the beginning of a campaign by lottery. Lottery practices were passed down among Finno-Ugric peoples for the distribution of goods and land and among Native American tribes in North America.[2]

> Lottery was used for thousands of years for religious, social, and political decisions.

Jewish and Christian Traditions

The Jewish tradition offers a particularly vivid source for the various ways in which lots can be used to decide government action. Almost all Old Testament sayings contain this phrase from Solomon's proverbs: 'his every decision comes from the Lord'.[3] According to reports in the Old Testament, priests' positions and responsibilities in the temples were drawn by lot. In the surviving writings, lotteries also perform a function that was of central importance for government at the time: the distribution of land. The writings report repeatedly how the land of Canaan was divided by lot among the different tribes of Israel. According to biblical sources, the unbelievers who had previously settled in the land and were defeated in war were also distributed by lot as slaves among the twelve tribes. It is also reported how, after the return from exile, every tenth man was chosen by lot to rebuild the capital. The Book of Judges tells of a military vendetta in which every tenth man was chosen by lot for war. There are also reports of lottery used to make decisions in social and political everyday life. In Solomon's proverbs, choosing by lot is generally praised as a means of settling conflicts: 'Choosing by lot puts an end to disputes, and between the powerful it decides.'[4]

Finally, lottery also plays a central role in the transformation of Israel from a priesthood to a monarchy in the first book of Samuel. Samuel organized a lottery in stages to determine the first new king: first among all the tribes, then among the clans, then among the families, until the last among the men of the last family was drawn: Saul, full of fear and hidden in the bag-

gage. The rationale of the divine will as an instrument of the king's choice, presented by Samuel, is unambiguous in this passage: men would never have chosen such a timid candidate; it was God's decision to choose the right one, with whom the Jews could later celebrate their great military victories.[5]

At least a certain reflection of this Jewish tradition can be found in Christianity in some passages of the New Testament, for instance when the evangelist Luke reports the lot used to select Zacharias for priestly service in the temple,[6] or when, according to Acts, Matthias is accepted by lot as successor of the disreputable Judas.[7] This account became seminal for early Christianity. Many early Christian congregations, following the recruitment of the apostle Matthias, chose their ministers before other forms of official appointment predominated in the integration of Christianity into the hierarchy of the Roman Empire. Traces of this early Christian practice can be found today in the term *kleros*, the Greek word for lottery.

Even today, we still come across religious interpretations of the significance of lottery, such as the method used for appointing ministers among the Mennonites and the Amish in the USA, who strictly follow early Christianity. The Coptic Pope is still selected by lot from three previously elected candidates. And it is still the case in Tibet that according to custom the Dalai Lama is found with the help of lottery. Currently, there is a conflict between the Tibetans and the Chinese government, which some years ago confiscated the golden urn used for the lottery to undermine the legitimacy of any future Dalai Lama chosen by the Tibetans. Overall, however, religious reasons for choosing by lot have become less important, and lottery is now understood less as an expression of divine will than as a technique for making random decisions.

Even this short account of early uses of lottery for religious purposes clearly shows how diverse their range of applications has always been. Lotteries have been used for the entire repertoire of ecclesiastical and governmental action: officials were selected by lottery, property decisions were made, goods were distributed, and unpleasant duties were assigned.

The Rationalization of Lottery in Athens

Even if the sacred signs later faded when lottery procedures were legitimized, this did not detract from their functional variety. On the contrary, the decisive step towards the modern use of lottery techniques occurred after lottery techniques migrated from the Assyrian and Egyptian empires to the Greek region.

In the archaic Greece of the eighth century BC, lottery was still associated with religious contexts; for example, Homer reported in the Iliad how the world was distributed between Zeus, Hades, and Poseidon by lot,[8] and Odysseus had his soldiers draw lots from his helmet to decide which of them would go with him to Circe's house and which remain behind.[9] Homer's heroic poem is typical of the time in its description of the use of lottery. We know that both in the archaic epoch and in later centuries in many of the several hundred ancient Greek city-states known to us today, the selection of priestesses for religious services, pairings in the wrestling bouts, the arrangement of the choirs, the order of the comedies and tragedies for performances in the theatre, and even the role of the main actors and the cast of the flautists were determined by lot under the invocation of the gods.[10]

> In ancient Greece a great proportion of the public officials were appointed by lot.

For the use of lottery specifically in the field of politics, we have an informative contemporary source for one of the city-states of the time, ancient Athens, in *The Constitution of Athens*, attributed to Aristotle. Aristotle describes in this text how the lottery was successively extended in five stages from the Draconian Constitution (ca. 621 BC) to the appointment of almost all officials in the era called radical democracy (from 403/2 BC).[11] His description attributes the Draconian constitution of the oligarchic Athens to the liberation of members of the council and some civil servants. He reports from Solon that he was able to reorganize the Athenian oligarchy in 594 BC, among other methods, by first drawing up a list of the members of the most powerful families seeking election to civil service positions, and then assigning the fields of duties among them by lot. Aristotle also describes how first under Themistocles and then under Pericles, an ever-greater proportion of the public officials in Athens were appointed by lot. The final stage was radical democracy, as he himself had experienced with disapproval in Athens.[12]

In Aristotle's day, democratic Athens had about 700 civil servants, 600 of whom were appointed by lot and almost 100 by elections. Elective offices were reserved for those activities that required certain essential qualifications in order to perform them. This was the case for membership of the college of warfare strategists and for posts that required a particularly skilled workforce in reading and writing, such as financial administration and protocol. All other government offices were drawn by lot, as was membership of the Council and all courts.

Aristotle's account not only provides an impressive picture of the extent of the offices whose occupants were drawn by lot; it also offers important points of departure for justifying the use of lottery without the sacred. With regard to Athenian democracy, Aristotle emphasizes in several passages of his *Politics* that the lottery gives every citizen the same chance to hold a political office.[13] In such passages, he follows Plato by describing the election as an aristocratic selection procedure and the lottery as a genuinely democratic one – and then criticizing it all the more strongly.[14] And the connection to democratic equality also coincides with Aristotle's reflections on Tyche, the goddess of good fortune, whom he depersonalizes in his scientific writings and understands as a happy coincidence beyond our influence.[15]

Aristotle considers several other aspects of the use of lotteries in politics and society. In the example of Solon's reforms mentioned above, he explains the rationale of the lot procedure with its pacifying effects in an oligarchic system. Another exam-

ple of this conflict avoidance function can be found in *The Constitution of Athens*, this time with reference to democracy. A board of ten men 'are selected by lot to take care of the sanctuaries […]. They see that the girls who play the flute, the harp or the lyre are not hired for more than two drachmae'[16] and if several men seek the same young girl, they draw lots. This lottery mechanism is designed to secure the sexual order in ancient Greek society by preventing violent disputes among old men over the spectacle of young girls.

Another important reason Aristotle gives for using lotteries is the fight against corruption. In *Politics*, he reports on corruption and the purchase of offices in a city-state called Heraia. Then, he praises the reform measures there: 'The open election was replaced by the lottery because those who had bribed had been elected'.[17] He adds the following explanation to his description of the multistage lottery processes for judges in Athenian democracy: 'He is drawn by lot so that the clerk [a key technical position in the organization of trials] is not always the same one and so can commit irregularities'.[18] We also find similar considerations among his contemporaries, such as Demosthenes or the unknown author of the *Dissoi Logio*, who praised the drawing of lots for the appointment of judges as an important precaution against attempts at bribery.[19]

> Aristotle considered lottery as a good way to establish equal opportunities and counter corruption.

The diverse lottery practices in the ancient Greek city-states are remarkable for two reasons. Firstly, we find here a diversity of the use of lotteries at all levels of government that cannot be found again in later political systems. Secondly, the ancient discourses on lottery shifted their theoretical justifications of the practice over time. Ancient philosophers secularized lotteries, and thus, came very close to the modern understanding of randomness.[20] For example, Aristotle no longer regarded the lottery as a medium exclusively for determining a divine will; indeed, he rather attacked such a view with objectively justified functional arguments. He implicitly demanded good practical reasons for the use of lotteries in politics and society. Only with this secularization of lottery could the potential range of random decisions be extended to all levels of government.

The Rediscovery of Lotteries in the Renaissance

After the collapse of the world of the Greek city-states, lottery procedures became marginal in politics. In the Roman Republic, although the first-voting groups were drawn by lot at the popular assemblies, the entire procedure was prepared in such a way that randomness made no difference to the final result. The lottery in politics only re-emerged with the *imborsazione* in Italian city republics. The term *imborsazione* is the noun for 'putting something in a bag', or 'bagging', as it is also called in older translations.

The beginning of this re-emergence cannot be dated to a precise year, and one cannot even say exactly where it began. However, this new attempt to use lottery in politics can clearly be associated with a new form of political governance that had been emerging since the eleventh century: the city republics of Northern Italy.[21]

From the twelfth century, a variety of election and voting procedures reminiscent of Athenian conditions were documented in these republics. The drawing of lots for magistracies probably began with the notaries in the twelfth century. This was a highly qualified professional group in which many courted the most lucrative orders from the municipalities for their relatives. The first scattered mentions of the use of lottery bags for government offices can be traced back to the middle of the thirteenth century. There are documented combinations of election and lot for the members of the Council of Bologna (1245–50), for the members of the Consilium of Novara (1287), and for the highest government posts in Pisa (1307). These are precursors of today's partial lotteries, which follow a preselection aimed at qualification (cf. the contributions by Margit Osterloh, Katja Rost, and Joël Berger). From the middle of the fourteenth century, there was an 'inflation of decisions by lot'[22] in the Italian republics, and from then on, we find lottery in almost all republics.

> Equal opportunities for the aristocracy through partial lottery made Venice to a stable republic.

To this day, Venice is the most famous. Here, a complicated multistage procedure of a mixed lottery and election procedures was used to select the Doge and other high officials in the republic.[23] Unlike Florence, which staggered from one constitutional revolution to the next, Venice was regarded for centuries as the epitome of a stable noble republic until it was crushed by Napoleon. This stability, as can be read in various contemporary treatises, was attributed to a considerable degree to the lottery. This is because a moment of random selection provided each of the large and powerful families with as good or bad chance at lucrative political positions as the other families, and they therefore refrained from choosing the far riskier paths of violent coup or civil war.

The Enlightenment End of Lottery

After the fall of the Republic of Venice, lottery again became an obsolete model in the political toolbox. This temporary end of the lottery had its deeper reason in a gradual process that deeply changed political mentalities. Human reason and human will were the two basic concepts on which the Enlightenment spirit created its new visions. Both required that the lottery be discarded due to its arbitrariness. Reason enables the selection of quality, while lot ignores quality; will is expressed in a conscious vote, in which the individual decision-maker is part of a causal mechanism, while lot produces passive and unwilled decisions.

Impulses for Practice

- Lottery has a rich traditional past. It already appears in early religious contexts.
- In ancient Greece lottery had been used as a rational decision mechanism.
- Lottery as a decision mechanism disappeared in the age of Enlightenment.
- Nowadays there are also options for the application of lottery.

The incorporation of chance into a legitimate political order was difficult to fit into the enlightening impetus of politicians and political theorists who were foremost in fighting against the arbitrary regimes of feudalist absolutism. Should one form of arbitrariness be exchanged for another, mere chance, instead of rational human reason and common political will? The underlying concepts of lottery were diametrically opposed to the intentions of Enlightenment thinkers.

Lottery mechanisms were rarely reintroduced during this period; one exception is its use at the University of Basel in the eighteenth century (cf. the contribution by Katja Rost and Malte Doehne). Only a few Enlightenment authors were able to gain some insight into lottery processes at the end of the eighteenth and beginning of the nineteenth centuries. Among these exceptions were Thomas Paine in North America, Condorcet in France, and Jeremy Bentham in England. These thinkers all included lottery procedures at certain points in their draft constitutions to counter corruption and the influence of powerful people.[24]

> The basic concepts of Enlightenment, human reason and human will, put a stop to lottery for the time being.

From today's perspective, these are three lonely and now-obscure pioneers of a renewed return of lottery in the name of political reason. Only in today's epoch of reflexive modernity, whose self-image includes enlightenment about the limits of the Enlightenment, has the negative attitude towards the factor of chance given way to a more differentiated view.

The Second Rediscovery of Lottery Today

Today, lottery procedures have long since been retrieved from the curiosity cabinet of the political past and find themselves institutionalized in a variety of ways and more frequently propagated.[25] In most cases, lottery procedures should not be used alone but should be combined with procedures such as qualification tests and elections (cf. the article by Bruno S. Frey).

In comparison with rival decision procedures, the lottery has the highest degree of 'procedural autonomy', as Niklas Luhmann has described the isolation of procedures from their surrounding environment.[26] Lotteries are therefore highly neutral. Neither good or bad reasons nor intensive preferences or strong interests can make any difference to an error-free lot procedure.

However, when can or should lotteries be sensibly employed in politics? It would be pointless and lead to an infinite regress were we to employ lotteries for the decision-making process to employ lotteries. There is no escaping the fact that we must find good reasons for lotteries. Basically, five general arguments are made for the use of lotteries in politics.[27]

1. *Decision Legitimacy*. In these cases, recourse is made to the lottery just to reach a decision; the flip of a coin after a stalemate in counting votes for a political office is such a case. The decision argument is particularly obvious in cases where it seems impossible for those involved to arrive at a well-founded decision. Jon Elster classifies three types of case: absolute 'uncertaincy', complete 'indifference', and 'incommensurability' of decision alternatives.[28] In such cases, reason demands that chance be allowed to decide. Any further insistence on rationally justifiable decisions would be irrational: a pathological hyperrationality that refuses to rationally recognize the limits of rationality.
2. *Equality Legitimacy*. According to this argument, lotteries are unequaled in guaranteeing the equality of all those participants in a decision-making process. In lotteries all the participants are absolutely equal in the sense that they are all subject to the same probability that the lot will fall to them. In any equality argument there is the implicit assumption that all participants in the lottery have an equal number of lots (were the number of lots to be unequal, then we would speak of a weighted lottery). The historical paradigm for the egalitarian use of lotteries in politics is the drawing of lots for offices in ancient Greek democracy described above.
3. *Representativity Legitimacy*. A third argument deals with the specific representation effects of lotteries for political office. It is not concerned with small twelve-member juries, for instance, but is applied exclusively in larger bodies. The voluntaristic variant of this argument sees the virtue of lotteries for posts in larger political bodies (e. g., citizens' assemblies) in its fair representation. The prototype for the voluntaristic notion of representation is a faithful reflection of a society's heterogeneity. The deliberative variant of this argument is less concerned with an exact mirroring of society than with an increase in the social heterogeneity of those political bodies that can be created by lotteries. The hope is that a larger number of various perspectives and experiences can be taken into consideration in the political advisory process.
4. *Efficiency Legitimacy*. Another type of argument claims that a lottery has the potential to increase the efficiency of political institutions and processes. The virtue of a lottery is that it is unerringly accurate, so there are no more decision-making costs to be borne; deadlocks are alien to lotteries, and by extension so are elaborate and costly repetitions of decision-making processes, too. Another argument concerning efficiency is that lotteries, as a rule, are very economical processes. Compared with most other political procedures, lotteries demand little expenditure of time and other resources. Deliberation and consensus are procedures and procedural

rules which stand at the opposite end of the efficiency scale in politics. Thus, in addition to majority rule, lotteries may also be used when no more deliberation seems likely to lead to a consensual decision.

5. *Productivity Legitimacy*. This is an extension of the cost-efficiency argument, for in certain situations lotteries can be justified on the assumption that they will ultimately have productive effects. These are, as a rule, indirect effects, as in the case of spot checks. We know of such random sampling in tax audits, doping tests, and hygiene and foodstuff controls. The basic idea is the same in all cases: all those subject to the rules are left in uncertainty as to whether and when a more thorough check will be undertaken, thus encouraging them to adhere to the regulations. This is the same logic employed by the productivity argument: that lotteries serve to discourage corruption.

> Lottery is highly objective, fair, economical, egalitarian, and productive.

Each of the five arguments can claim validity independently of the other four. Each argument starts with a concrete problem and claims that the lottery offers an appropriate procedure to solve this problem. Thus, the question of the use of lottery procedures becomes a practical question of government action that should be discussed in a pragmatic way and independently of ideologies and metaphysical systems of thought. The results of lottery procedures are arational. It requires a higher level of rationality, a second-order rationality, to recognize the rationality of arational procedures in certain contexts.

Abstract

The use of lotteries as a tool for political decision-making has a long tradition which dates back to early periods of human development long before the discovery of 'chance' as a non-causual phenomenon. Using a lottery was part of a religious practice to figure out god's will. Over time, lotteries lost their exclusive religious connotation and became recognized as a tool for decision-making by pure chance without any metaphysical connotations. The article reconstructs the major historical steps of the use of lotteries in administrative and political decision-making up to today as well as the potential second-order rationality of decision-making by chance.

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The ‘Wahl zu Dreyen’

The use of lotteries in the election of professors at the University of Basel in the 18th century

Katja Rost/Malte Doehne

From 1718 to 1818, professors at the University of Basel were selected using a structured lottery procedure. The article presents this procedure and discusses its advantages and disadvantages. The example of the University of Basel shows that well-designed lottery systems can also be useful for expert organizations.[1]

Lotteries seem an unusual way to select occupants for positions of power. Nonetheless, this approach has a long tradition in politics (see the contributions by Hubertus Buchstein and Bruno S. Frey in this issue).[2] It is well documented that important political offices were allocated by lotteries in ancient Athens, and numerous northern Italian city-states and Swiss municipalities.[3] It is probably less well known that lotteries have also been used to select university professors. The University of Basel, Switzerland, offers a well-documented example in the 18th century. This case is particularly interesting as it shows that partial and targeted lotteries can also be usefully applied in expert organizations such as universities. The aim of this article is to outline the essential features of the lottery procedure that was introduced at the University of Basel in the early 18th century and to discuss some of its advantages and disadvantages.

Ascent and Descent of the University of Basel in the 17th Century

The University of Basel, founded in 1460, is the oldest university in Switzerland. It is considered the birthplace of European humanism. Unfortunately, the first heyday of the University only lasted until the middle of the 17th century. The decline of the University is documented not least in the dwindling number of students. While 1100 students were still enrolled between 1611 and 1621, the number of students had fallen to 634 merely 20 years later. Basel’s reputation as a doctoral university was also lost. While in the first quarter of the 17th century more than 400 students acquired a doctorate in medicine, the Dean of the Medical Faculty reported by 1761 that there were no more medical students at the University. Basel had fallen out of fashion as a university location.

A traveler from Germany wrote in 1776: “I think a stranger who didn’t know there was a university here could live in Basel for years without knowing […] I don’t remember ever noticing a student here”[4]. Beyond national borders, only students from neighboring regions came. The teaching staff also changed.

Fig. 1: Caricature of the Basel Lottery. (Source: State Archive Basel-Stadt, BILD Falk. A 499)

While in the 16th century people from Basel represented less than a quarter of all lecturers, in the 17th century they occupied the majority of professorships, and lecturers from abroad had become the exception. The university chairs were dominated by several leading Basel families, including the Battier, Bauhin, Beck, Bernoulli, Burckhardt, Buxtorf, Faesch, Iselin, Platter, Wettstein, and Zwinger families. In the 17th century, 15 Basel families occupied around 60 percent of the 80 professorships. Regular dynasties of scholars had formed. For example, the professorship of Hebrew was occupied without interruption from 1588 to 1732 by four generations of the Buxtorf family, while the professorship of mathematics was occupied from 1687 to 1790 by three generations of the Bernoulli family.

> In the 17th century 15 Basel families occupied around 60 percent of the 80 professorships.

One can easily imagine that this development was not beneficial to the University of Basel and its external appeal. There was a lack of innovations and impulses from outside, and the scientific spirit of the University dried up. In some documented cases, for example, the Zwinger and Bernoulli families, the father's ingenious talent was inherited. In other cases, however, only the claim to the office was inherited. Over time, this paralyzed the University; the son completed his father's scientific work, and the grandson was content to interpret and pass it on. When new positions had to be filled, the incumbents looked after their own and ensured that professorships did not leave the family circle. In the end, the University of Basel resembled a family event. In the mid-18th century, for example, Johann Bernouli I was Professor of Mathematics, his two sons Professors of Eloquence and Anatomy, and his nephew the Professor of Law. The faculty became increasingly homogeneous. The University was characterized by cronyism and nepotism.

The Introduction of the Lottery Procedure in 1718

The intersection of academic with social, political, and economic life was common in many places at the time. In Basel, however, the city-state's constitution resulted in a close intermingling between the city council and the guilds, which led to particularly dense cliques.[5] This state of affairs did not escape contemporary observers (see fig. 1). To fight the rampant cronyism and corruption, the city adopted a procedure that was being experimented with in various regions of the country at that time: the introduction of elements of lotteries to the assignment of positions of power. In Basel, two procedures came to be used – first so-called *Ballotage*, and then from 1718 onwards, when this did not eliminate nepotism, selection by lottery. It is worth comparing both procedures, *Ballotage* and lottery, briefly.

Ballotage, a secret ballot procedure that was introduced in 1688, consisted of a multi-stage selection process in which the selection committee was formed by repeatedly drawing lots of individuals who would make up the electors for a position to be filled. In a first round of the *Ballotage*, a third of the individuals entitled to vote in principle were eliminated by lot. This stage had each potential elector draw a marble from a bag containing two-thirds silver marbles and one-third white marbles (see fig. 2). The third that had drawn white marbles was eliminated from subsequent proceedings. The remaining electors were then sworn in to vote for the most suitable candidate and elected three candidates by secret ballot. Abstentions were permissible, so one did not have to reduce one's own chances or those of

Ternarium
(based on three elements) identifies the three top candidates from which the professor or office holder has been choosen.

a relative or friend. Before a final election was held among the three candidates who had made it into the so-called Ternarium, relatives and in-laws of the three candidates were replaced, as were one third of the voters, by a second round of *Ballotage*. The final election took place in secret: each voter stepped behind a curtain, where three containers with the names of the candidates had been placed, and threw his marble into the container of the preferred candidate. The candidate with the most votes received the office or chair.[6]

In retrospect, it seems remarkable that this procedure only applied a random process to composing the electoral body, while the appointment itself ultimately remained the responsibility of that body. Some contemporaries saw this to be a reason for the continued existence of collusion and underhand reciprocal arrangements. In 1714, therefore, local priests and professors of the University of Basel petitioned the Grand Council and the Mayor of the City of Basel to introduce a lottery-based system. As they put it, the lottery is a means that 'does not see the single person, does not attach itself to any party, nor can it be won through flattery and promises or by threats of violence'.[7]

In short, the lottery was presented as a tried and tested means for putting an end to the intrigues that had continued to plague the *Ballotage* process.

> Lottery had been considered an effective means for putting an end to intrigues.

The lottery procedure introduced at the University of Basel in 1718 proceeded as follows: All applicants had to submit a short dissertation about the subject of the professorship and defend it in a public disputation. The disputations had to take place within a few weeks and were attended not only by members of the election commission but often also by the other candidates who had applied for the position. The public disputation resembled a kind of intellectual wrestling between the candidates. Only those who successfully passed these hurdles were admitted into the pool of candidates who could be elected in principle. This ensured the basic suitedness of the candidates for the office. Contemporaries report that unsuitable candidates often withdrew their candidacy as a result of these procedures. However, candidates who had already performed these services for previous procedures or who already held a chair and wanted to switch to a vacant chair were exempted. If the pool of eligible candidates consisted of more than three candidates, which was often the case, a 'reasonable choice' was made to reduce the number of candidates to three. This reasonable choice was made by the election commission, which was

Fig. 2: Election instruments of the Basel city, university, and guild offices according to the so-called Ballotierordnung of 1688. (Source: Historisches Museum Basel, photo: M. Babey)

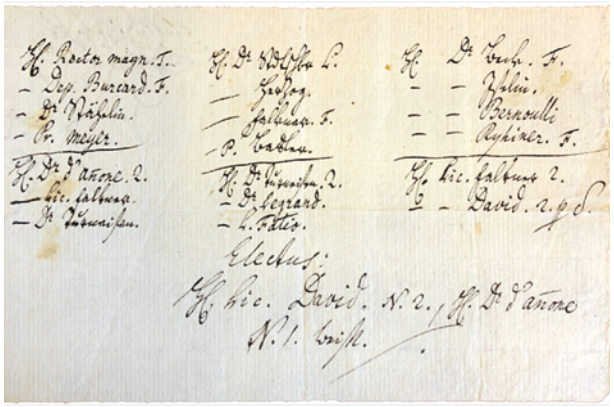

Fig. 3: Ballot paper to fill the professorship of the Pandecs and Canon Law, in 1774.
(Source: Staatsarchiv Basel, Erziehung Z 4 Professio codicis, 1543–1779, photo: L. Lämmli)

divided into three colleges by lot. Each of these colleges selected a candidate to the *Ternarium* in a secret paper ballot (see fig. 3). From these three top candidates the *Electus* was chosen by lot in a final step. If a candidate had been nominated for the *Ternarium* by two electoral colleges, his chances in the lottery were doubled accordingly.

Historical Advantages and Disadvantages of the Lottery Procedure at the University of Basel

First, it should be noted that the lottery procedure used at the University of Basel must not be equated with blind chance, since the lottery only decided among the three top candidates. It often happened that the candidates in this final round were on a par with each other. For example, the *Ternarium* for the Chair of History in 1754 consisted of Isaak Iselin, Johann Heinrich Gernler, and Johann Jakob D'Annone. Gernler, who was chosen by lot, was regarded as the most learned scholar in the field of history. D'Annone, on the other hand, had the most comprehensive education, while Iselin was considered the most independent thinker. This shows an essential advantage of the lottery: very different, and therefore, incomparable criteria of the candidates' performance are treated as equal by the lot.

The introduction of the lottery also improved the atmosphere in Basel, which had been poisoned by family politics and the occupation of positions by relatives. For example, in 1737 the head of the academic senate at the University of Basel reported in a letter to the city's council: "The new method of voting satisfies more competitors. Every day we hear people say: I have made it into the *Ternarium*, what more could I ask for? No envy, no jealousy against the beneficiaries, luck wanted it that way."[8] Moreover, it was noted that the introduction of the lottery had encouraged those people to run for office who "are modest enough not to imagine that they are superior to everyone else"[9]. If such candidates proved themselves in the disputation, the circle of possible candidates had in principle expanded.

Of course, the procedure did not always run smoothly. Until 1770, father, son, and next of kin were allowed to vote, provided they were professors at the University of Basel. In addition, the rule that application documents, once accepted, were sufficient to be included in any pool of eligible candidates led to some absurd misappointments. In 1795, for example, a lawyer, albeit excellently qualified, was appointed professor of Hebrew. To some extent, this error could be corrected later by exchanging the professorship with that for history. In other cases, however, such corrections were not possible for long periods of time. In 1735, for example, the physicist Daniel Bernoulli held the chair of anatomy and botany while the botanist Benedict Staehelin held the chair of physics. In Bernouli's case, the situation was resolved only in 1750, when the Grand Council, with the agreement of the faculties concerned, entrusted him with the professorship of physics without a call for tenders, election, or drawing of lots. In general, it can be said that the cause of such misappointments was not the lottery system itself, but an inadequate specification of requirements for the selection of eligible candidates.

> Misappointments were caused by an inadequate specification of requirements for the selection of eligible candidates, not by the lottery system itself.

Often, chairs were traded among professors until everyone was in the right position and in the right subject. For example, the mathematics professorship of the world-famous mathematician Johannes I Bernoulli was to be filled directly by his son, Johannes II Bernoulli, then Professor of Rhetoric. This direct promotion was initially prevented when the physician Jacob Christoph Ramspeck was chosen for this position by lot in 1748. Within a few days, however, Bernoulli and Ramspeck had exchanged their chairs, giving the impression that this exchange had been agreed from the outset.

Another way in which the lottery procedure was circumvented on a case-by-case basis was that professors already in office first moved up to the more prestigious professorships, and then a candidate was selected for the chair with the lowest prestige. Among the theologians, for example, the 'highest' professor-

Impulses for Practice

- The strategic use of random elements can improve hiring decisions, even in expert organizations.
- It is important to know where the random element comes into play: whether in determining the electoral commission, as in the case of the *Ballotage*, or in the final selection of the top candidates, as was the case in the lottery procedure adopted in Basel in 1718.
- Preceding procedural measures can and should ensure the basic suitability of the candidates under consideration.

ship was that of the New Testament, followed by that of the Old Testament, and finally the professorship of dogmatics. In medicine, the hierarchy was anatomy/botany, theory, and practice. If, for example, the professor of anatomy/botany died, then the professor of theory took over the chair of anatomy/botany, and the chair of practice was newly filled.

In addition, contemporaries complained that some of the appointments were sluggish. This was the result of the long selection process, consisting of disputation and trial selection of all candidates. However, this is still the case at today's universities and has nothing to do with the lottery but with the complexity of evaluation procedures.

The lottery also resulted in a large number of candidates applying for a position because they had to try their luck repeatedly. The uncertainty of the lottery forced them to register for every professorship that became vacant. One disadvantage of the lottery is evident here: some of the great scholars of the 18th century failed in the lottery several times and obtained a chair only in late age, so the lawyer Johann Rudolf Iselin or the philologist Anton Birr, both only at the age of 52. Birr was particularly unlucky. He made it into the *Ternarium* ten times without being selected. However, conventional voting modes can produce similar outcomes. Other scholars were favored by the lottery while still young, for example, the theologian Hans Balthasar Burckhardt at the age of 23 and the physician Johann Rudolf Staehelin at the age of 28.

Conclusion on the Effect of the Lottery Procedure

A frequently voiced objection to lottery procedures is that the 'blind lottery' rejects capable candidates and favors unsuitable candidates. An examination of the circumstances and procedures at the University of Basel, however, shows that this assessment is not generally valid. Since preceding selection procedures ensured the quality of the *Ternarium*, the lottery procedure proved to be advantageous and was generally perceived and praised as salutary.

The intermittent crises at the University of Basel could not be completely halted by the lottery. The underlying causes were too varied, for example, the consequences of the Thirty Years' War, the Reformation, the restructuring of the university system, and the meager salaries of professors at the University of Basel compared with other universities. However, the lottery halted the provincialization of the University and the perpetuation of scholastic dynasties. Precisely because of this, the University of Basel continued to produce outstanding scientists and continues to exist today. The University of Basel recently celebrated its 550th anniversary.

Abstract

The use of lotteries for making personnel decisions has a long tradition in politics. For example, important political offices were long allocated by lot in ancient Athens as well as in numerous northern Italian city-states and Swiss municipalities. It is less well-known that lottery systems have also been used in the selection of university professors. The University of Basel in the 18th century offers a well-documented case in point. This example is particularly interesting because it shows that well-designed lottery systems can be usefully applied in expert organizations. This essay outlines the main characteristics of the lottery that was implemented at the University of Basel and discusses its advantages and disadvantages.

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Representative of the People by Lot

Can random procedures improve government behavior?

Bruno S. Frey

Democratic policy should take diverse views into consideration. This goal can be achieved by taking a random choice of persons out of a suitable basic population. Random procedures, or sortition, prevent the illegitimate influence of powerful persons and organizations. Such systems can productively be used in many areas of politics. Concrete proposals for the selection of members of parliament, the executive, international organizations, and courts are discussed.

Decision Procedures in Politics

Democracy is commonly considered that kind of political regime in which citizens may determine via elections which parties and persons should represent them in parliament. This also indirectly determines the composition of government. In semi-direct democracies – such as Switzerland – citizens may moreover decide about particular policies in popular referendums. In authoritarian regimes a particular group or singular person imposes what is considered appropriate for society as a whole – while their own personal, often financial interests frequently play an important role. The opportunistic behavior of the ruling class is often hidden behind nice sounding names. Thus, Napoleon called himself the 'Emperor of the French'. Other dictators do not even need to have such titles as they are entrenched in a most powerful position. An example is Stalin who simply called himself 'Secretary of the Communist Party of the Soviet Union'.

> Random procedures played an important role in classical Athens as well as in many North Italian city-states.

In addition to democratic and authoritarian regimes there exist additional socio-political decision-making systems. This contribution is devoted to a procedure largely forgotten in recent times but which played an important role in classical Athens and in many medieval cities, particularly in the North Italian city-states.[1]

Political decisions can be taken in many different ways:[2]

- The dual conception builds on the opposition between the decentralized market and the centralized political plan.
- There is also a duality between the market and voting. The market is taken to be the 'economic' and voting the 'political' mechanism to reach social decisions. Today it is well known under which conditions the price system and popular referendums, respectively, do not work in a satisfactory way (these are the so-called 'market failures' and 'political failures').
- The procedures of 'exit' and 'voice' delineate the basic possibilities available to individuals and groups when government performance is lacking.[3] When a government takes bad decisions, people can emigrate (exit) or protest (voice).
- *Aleatoric procedures* – named after the Latin word 'alea' (for dice) containing random elements are rarely used in present-day politics. Aleatoric decisions, also called *random choice* or *sortition*, have many desirable characteristics. As is the case with all other social decision-making mechanisms, it also has some negative aspects. Both advantages and disadvantages must be compared to those of other social decision-making procedures.

The second section of this contribution lists the most important advantages and disadvantages of social decision-making systems. The third section discusses possible applications of random procedures in politics. The last section provides concluding consideration about aleatoric procedures in politics.

Characteristics of Random Procedures

The term 'random' is here used in terms of a statistical probability. It has nothing to do with arbitrariness but is based on mathematical logic. A random decision is constructed to push back undesired human influence.

Advantages of random procedures

Aleatoric procedures have important *advantages* over other decision-making systems:[4]

- Random decisions allow us to exactly represent the underlying basic population. In an urn containing balls repre-

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- Random as a procedure should be considered throughout democratic policies.
- Random procedures can be used in many different areas of politics.

senting various characteristics of the population, each ball has the same chance of being selected. Random procedures disallow systematic discrimination, for instance, according to race or gender. The importance of each group is mirrored according to its importance in the basic population. As a result, those parts of the population otherwise disregarded in the political process are adequately represented.

- Random decisions prevent illegitimate influences on political decisions. This is of particular importance when well-organized interest groups want to influence social decisions in their favour. Aristotle already pointed out this property as being of great importance.
- As random decisions are immune to human intervention, it pays less to spend money to influence the political process and its results. In contrast, all other social decision-mechanisms, such as democratic elections or bargaining processes, are subject to the influence of particular interests via spending money, old boys' networks, and corruption.
- Aspects and views disregarded or considered to be unimportant at the time of a political decision are automatically represented according to their importance in the basic population. In this regard, aleatoric choice is better than imposing quotas. Quotas can only be set when the corresponding dimensions (such as gender, education, age or nationality) are taken to be important. Random choice allows us to take into account aspects previously unknown, and therefore impossible to represent by quotas.
- Random choice helps us to maintain the stability and continuity of government when there are strong conflicts between various groups in the basic population. Each of these groups sees a chance to exert influence in the future, even if at present the opposing group is in power. This aspect played a major role in the North Italian medieval city-states. Without aleatoric procedures some groups run the danger of being suppressed in the political process. Under these conditions, the disadvantaged groups may be induced to use illegitimate force to publicize their demands. This may result in costly political uprisings and internal wars.

> Random decisions allow us to exactly represent the underlying basic population.

Disadvantages of random procedures

There are also several *disadvantages* of aleatoric decision-making systems:

- Aleatoric procedures do not distinguish capabilities and qualifications. Randomly selected persons may be incapable of performing the required tasks. For this reason, random mechanisms in most cases are combined with other selection mechanisms. For instance, the basic population from which the random selection is restricted to persons meeting certain desirable criteria.
- Random selection can reduce the sense of responsibility most importantly because the persons chosen need not take into account the need to be re-elected at the end of their term in office. This problem can be reduced, for instance, by only considering people in the basic population who revealed elsewhere their sense of responsibility. It can moreover be required that the persons chosen must justify their actions and are punished for illegal or badly planned decisions.
- It may be that randomly chosen persons refuse to take the political offices to which they were chosen. This problem can be overcome in various ways. It can be stipulated that every person should and must follow his or her citizen duty. In Switzerland, for instance, many communes require their citizens to undertake political duties if chosen. However, to impose a duty to accept a political office may lead to careless or bad performance. Alternatively, successive random choices can be taken until a sufficient number of willing persons are found. This procedure has the disadvantage that it may result in a social selection – for instance, that only wealthy people are prepared to accept a political position – and that not all interests are well represented. The best procedure may be to offer randomly chosen persons a financial compensation inducing them to accept the attributed political task.
- Decisions based on a mathematical probability may be considered 'irrational' or 'arbitrary' by the public, and therefore taken to be illegitimate. Random decisions do not take into account issues of content. For this reason, random decisions cannot be used in all instances but only under conditions for which a careful balancing of the advantages and disadvantages has been undertaken. Moreover, the population must be ready to accept the use of random procedures.

Aleatoric decisions have considerable advantages but can only be used to a restricted extent in the political arena. They must be amended by other procedures. Nevertheless, this social decision-making system should receive more attention than has been the case in modern times. But it must be acknowledged that other procedures also have their advantages and disadvantages.

> As qualifications are not taken into account, the use of random procedures in politics is limited.

The following section discusses some applications of random social decision-making in the political and legal sphere.

Some Applications

In politics the *members of parliament* can be randomly chosen from the population of citizens as a whole. This procedure could be used to determine the members of the US House of Representatives or the German Bundestag. The members of a second chamber would be determined according to the traditional election procedure. At the European Union, a second, randomly determined chamber of the European Parliament could be established in order to achieve a close representation of citizens. In analogy to the British 'House of Lords' this could be called 'House of Lots'.[5]

As is well-known and documented, interest groups and the established leadership of parties have a strong influence on who is likely to become a member of parliament. Only those persons supported by these dominant actors have a realistic chance of being elected. A random choice among all citizens would dramatically reduce this unconstitutional influence. In addition, the huge amount of money and time spent for entering parliament would be avoided.

An aleatoric selection can also be envisaged for the *executive*, provided a formal minimal qualification is secured. The members of the Swiss government, the National Council composed of seven members, could be randomly selected out of the members of the two chambers of parliament. This would over time guarantee a composition of the government according to the strength of parties, gender, religion, and regions.

International Organizations are another field where random procedures can be applied in a fruitful way. These organizations are subject to a fundamental democracy deficit. Giving citizens binding political participation possibilities, the right to start popular initiatives, and to call back members of the executive, reduces the effects of such failure. This can in principle be achieved by popular referenda. However, this possibility is difficult to apply due to the large number of citizens involved. A random selection of representatives who use these rights could overcome the democracy deficit.[6]

Aleatoric procedures can also be used to select judges. In some countries – an example is Switzerland – the members of the highest court (Bundesgericht) today are chosen according to party affiliation. In Switzerland, an initiative has been started to have the judges selected by a random procedure in order to have more independent persons.[7]

Concluding Remarks

It is time to rejuvenate the advantages of aleatoric systems of selection in politics, which today is largely forgotten. Most importantly, random mechanisms allow involving groups of persons into the political process whose representation otherwise is difficult or even impossible to achieve. Thus, it would be unnecessary to introduce gender quotas. The representativeness achieved by random selection also applies to ideas and movements newly arising in politics, and therefore are not yet included in party programmes. As a result, the diversity of ideas necessary in a dynamic society would be secured. In addition, random procedures overcome existing major conflicts in society. No group can over time be excluded from the political decision process. Aleatoric procedures also reduce old boys' networks and corruption, as well as the huge financial expenditures characterising today's democratic election processes.

> Random procedures reduce the risk of nepotism.

Political decisions cannot be taken solely on the basis of random procedures. They must be integrated into suitable institutions and combined with other socio-political decision mechanisms. Aleatoric systems may well be capable to overcome the increasing disassociation with democracy visible in the public.

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Abstract

Random decisions make it possible to integrate diverse views in a democratic political system and to reduce the illegitimate influence of powerful persons and organizations. It is unnecessary to establish quotas. The harmful antagonisms between groups are overcome because each one sees a chance to get influence in the future. Random decisions disregard skills and qualifications of potential politicians and may reduce their sense of responsibility. Random mechanisms therefore cannot be applied without carefully considering the pros and cons of this procedure, and consent by the citizens is required. Random mechanisms could be applied to the US House of Representatives, the German Bundestag, or the Swiss Nationalrat. In the case of the executive branch formal minimal requirements must be introduced. The strong democracy deficit of international organizations can be overcome by selecting the national representatives via a random process.

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Applications of Lottery Procedures Today

Four reasons for the application of lottery

Sarah Heinzmann

The lottery procedure has a rich tradition dating back to ancient Greece. Today, it has largely fallen into oblivion. However, this selection mechanism is successfully used in some areas of society even today.

Most people associate lotteries with luck. This is not surprising; after all, you can win millions in the lottery by chance. The use of random selections is generally known in statistically representative surveys. What is less well known is, however, that the lotteries were used as a selection procedure in politics, and that this even has a rich past. In ancient Greece, for example, political positions were allocated among the male citizens of Athens by lot. Lottery procedures were also used to distribute political power in medieval Italian city-states (see the contributions by Hubertus Buchstein and Bruno S. Frey in this issue). In numerous Swiss municipalities, drawing lots was used to elect municipal councils, for example, in the cantons of Glarus and Bern.[1]

Even today, lottery is still used as a decision-making procedure in some social and political areas. Although the well-known decision-making procedures of market and hierarchy, negotiations, majority decisions, and self-voting predominate,[2] there are several good reasons for remembering the decision-making procedure of lottery, also called drawing lots or random selection. At airports, for example, passengers are randomly selected for security checks. This is intended to create unpredictable uncertainty. In Anglo-Saxon legal practice, randomly drawn citizens can be called for jury duty. In court cases, a jury, usually of twelve members, decides on the question of guilt or innocence of the accused. Since the jurors have been drawn by chance, they represent the moral judgement of society as a whole.[3] In Switzerland, too, jury courts could be convened until 2010.[4] Including random components in the allocation of donor organs has repeatedly been discussed as the solution to a moral dilemma: Life-and-death decisions are not assigned to an individual but to the lot. One further example is the Coptic Pope, who is randomly chosen from three candidates. This religious community believes that the will of God manifests itself in random selection.[5]

In all these cases, chance is chosen as a rational decision-making mechanism. There are many other reasons for using random methods: the avoidance of nepotism, the fair distribution of scarce goods, the inclusion of broad sections of society in political decisions, and the intentional creation of diversity. These four motives are discussed here. Current if rather unusual examples show that drawing lots is still a sensible approach to decision-making today, even though it has largely been forgotten.

Combating Nepotism

Nepotism and old boys' networks often have a negative influence on appointments to powerful and prestigious positions. Here, lottery procedures provide a remedy by selecting candidates at random from a pool of suitable candidates, as several examples from academia show. One impressive instance is the process of appointing professors at the University of Basel in the 18th century (see the article by Katja Rost and Malte Doehne in this issue). The lottery procedure caused personal contacts and discrimination against marginalized groups to become less important. Since 2008, Italian universities have randomly selected the members of appointment committees to combat nepotism, with the results that candidate relations and networks have played a lesser role in filling posts.[6] Between 1960 and 2005, a part of the appointments committees at the French *L'École des hautes études en sciences sociales* (EHESS) was formed by lot from the teaching staff. Following the introduction of the amendment, the composition of any appointment committee was no longer predictable. The candidates could no longer rely on their networks, and nepotism was prevented.[7]

Inclusion of Broad Sections of Society

In most democracies, the political process is characterized by strong social segmentation. The well-paid, the highly educated, and men are overrepresented in parliament, and voter turnout is also socially selective: high earners and highly educated people vote much more often than low earners.[8] This means that the concerns of the low-paid and less educated are not adequately represented in the political decision-making process. Consequently, their political interest declines.[9] Here, too, the lottery procedure can provide a remedy. Proponents of what has been termed Aleatoric Democracy (*alea*: Latin for dice) pro-

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- Advantages of random selection: it prevents nepotism, involves broad sections of society in political decisions, helps in distributing scarce goods, and guarantees diversity.
- Disadvantages: random selection does not take into account the competences of candidates or the quality of applications.
- Solution: hence it is advisable to use random selection combined with conventional decision-making prodedures.

pose a partial lot selection of the legislature (see the contributions by Hubertus Buchstein and Bruno S. Frey in this issue).[10] In this way, social groups that are currently underrepresented in the political process can be included. Citizens' forums are weak versions of this proposal being implemented today. In this process, 100 to 200 citizens are randomly drawn into a committee in which they discuss political issues. The result is an image of opinion that reflects social discourse better than the procedures of representative democracy. Social selectivity in political opinion-forming is improving. Such citizens' forums have been convened in the Netherlands, Ireland, and the Canadian provinces of British Columbia and Ontario.[11]

> Citizens' forums are expected to reflect the social discours better than the procedures of representative democracy.

In Ireland, citizens' forums have led to two major constitutional changes in recent years. The first forum took place in 2012. Two thirds of the committee were elected at random from the population, one third from politicians. This body's recommendations on marriage for all were endorsed by Parliament and finally adopted in a referendum with 62 percent approval.[12] A subsequent citizens' forum in 2016, the citizens' forums, discussed the legalization of abortion, among other things. Here, all participants were chosen by lot from the population. This random selection weakened the influence of politicians. Citizens' forums recommendation on abortion was also adopted in a referendum with high approval and came into force in 2018.[13]

However, the goal of political inclusion was only partially achieved despite the use of lottery procedures. Because participation in the citizens' forums was voluntary, substantial self-selection occurred. In fact, only five to seven percent of the randomly selected people were willing to participate in the project.[14] Appropriate incentives should therefore be created to reduce self-selection, such as compensation for loss of earnings and the awarding of honours for work done.

Fair Distribution of Scarce Goods

In the allocation of goods or rights through price mechanisms, the financially weak are disadvantaged, and in majority decisions, minorities can be structurally discriminated against. In many situations, lottery is therefore seen as a fair alternative to other decision-making mechanisms (cf. the article by Bruno S. Frey in this issue). Individuals are more likely to accept an unsatisfactory outcome if they regard the process that led to it as fair.[15] This is illustrated by situations in which the study places or access rights to collective goods are allocated by lot.

Study places are scarce in many countries, and the number of admissions is limited. In most cases there are entrance examinations, which in many countries are accompanied by high semester fees. This puts the financially weak at a disadvantage. The allocation of study places by lot offers an alternative. This procedure is used, for example, in the Netherlands. Study programmes such as medicine have what is termed a *numerus fixus*: a fixed number of study places, which is determined on the basis of economic demand.[16] In Germany, too, some study places are allocated by lot.[17] In France, the lottery procedure was also used in subject areas where there were more prospective students than places to study. Due to the high dropout rates, the 2018 procedure was replaced by a system in which universities can pick out their students. However, this led to extensive protests accusing the proponents of the new system of unjustified social discrimination.[18]

> In Canada the wildlife population is protected by allocating the scarce hunting licenses by lot.

For many other public goods, the lottery procedure is also regarded as a fair distribution mechanism. In general, access to such goods is largely free at first, but consumption is rival. The result is overuse. To counter this, access rights need to be established. In Canada, for example, the wildlife population is protected by allocating the scarce hunting licenses by lot. Some countries distribute residence permits by lot in combination with an application procedure, such as the Principality of Liechtenstein and the USA. Lottery procedures tend to be applied to govern participation in public goods such as public infrastructure, legal protection, and social security.

Creating Diversity

In research, unorthodox new ideas often take time to become established. There are numerous examples of how even Nobel Prize winners initially had difficulty in publishing their ideas and obtaining research funding.[19] Consequently, some research funding organizations have chosen to combine expert selection and random methods. One example of such is the VW Foundation.[20] The German Science Council is also discussing such a procedure.[21] Just as in passively invested equity portfolios the risk posed by wrong investment decision is diluted by diversity, in research the diversity of ideas is also promoted by drawing lots after a strict preselection. This reduces the risk of misallocation of research funds in the face of high scientific uncertainty.[22]

> Drawing lots reduces the risk of misallocation of research funds.

Bottom Line

Because chance is considered irrational by many, the lottery procedure has fallen into oblivion, despite its rich tradition and long history. However, lottery procedures can be highly rational under certain conditions and are still used today for a variety of reasons. They can be used to combat nepotism, to include marginalized groups in political decision-making processes, to distribute scarce public goods and to ensure the diversity of research ideas.

Like any selection mechanism, the lottery procedure also has disadvantages. Its greatest disadvantage is that the competence and qualifications of the candidates do not play a role in the random selection. For example, the allocation of study places in France did not involve the selection of motivated or hard-working candidates. Likewise, the sense of responsibility and effort of the randomly elected may suffer; for example, members of a citizens' forums do not have to win an election campaign and cannot be re-elected based on their performance.

Therefore, it seems reasonable to combine the random selection procedure with conventional selection procedures. Frequently, the combination may involve a two-stage application mechanism in which a shortlist of suitable candidates is first drawn up, from whom one is then chosen by lot. The better the preselection, the closer the candidates are to each other in their qualification for the position or event. With purely conventional procedures, the final selection usually depends on irrational preferences or old boys' networks.[23] Seen in this light, the lottery is a highly rational and just decision-making mechanism.

Abstract

Random selection has a rich history that reaches back to ancient Greece. Today, it is nearly forgotten. But there are various reasons for using random selection. First, lottery procedures can serve to fight nepotism and old boys' networks. Second, lottery procedures can lead to the inclusion of broader classes of the population, such as through citizen assemblies. Third, random selection can be used to distribute collective goods. Fourth, lotteries are used to generate diversity, for example, in the distribution of research funds. Lotteries are by no means irrational procedures; on the contrary, under the right conditions they can be considered a very rational decision-making mechanism. However, they also run the risk, for example, that the qualifications of candidates are not taken into account. For this reason, random selection is mostly applied in combination with other decision-making mechanisms.

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CEO by Lot

How focal random selection mitigates hubris

Joël Berger/Margit Osterloh/Katja Rost

Hubris is the tendency of overconfident leaders to abuse power to the detriment of other members of the community. The consequences of hubris are often failed investments or excessive bonuses. We argue that in addition to the established recruitment practices, the selection of CEOs should be based on focal random selection. Hubris is mitigated if a candidate is selected after a screening according to conventional critera. In a laboratory experiment it was shown that focal random selection in fact reduces antisocial behavior in leaders.

Accounting fraud at Enron, software fraud at Volkswagen, corruption at FIFA – the list of misconduct by top managers is long. Another somewhat laudable example is Deutsche Bank, which has taken enormous risks with its tricks on the American real estate market, so that the IMF officially described it as the "most risky bank in the world". There are plenty of prominent examples of former top performers whose hubris has inflicted great damage on their companies. Nick Leeson, for example, ruined Barings Bank in 1995, Jérôme Kerviel caused a loss of 4.82 billion Euros at the major French bank Société Générale in 2008, Kweku Adoboli inflicted on UBS a loss of 2.3 billion U. S. dollars in 2011.

Star CEOs and Hubris

How can it happen that former superstars in business sometimes lose all sense of proportion and inflict serious damage on their company with autocratic measures? Extreme overestimation of individuals' abilities and performance might be the reason. It turns managers into gamblers. If the company is successful, CEOs attribute this to their superior ability and bask in its brilliance. Their ego and their willingness to take risks increase to the point of excess. The extreme personalization of companies and celebrity CEOs convey to the public the idea that the well-being of a company depends solely on top management.

However, a large number of empirical studies of management research come to a different conclusion.[1] The success of a company can be attributed to the abilities of its CEOs only to a small extent. Instead, it can be explained by many other conditions that are not within his or her sphere of influence – for example, an economic boom, political developments, or simply luck. Corporate growth can therefore rarely be attributed to individual CEO stars, but rather to external circumstances. Bill Gates, for example, admits that Microsoft's success depends to a large extent on the luck of having developed the right product at the right time.[2] In general, the probability of error in predicting the success of a product is 50 percent, and even 70 percent in the case of consumer goods such as films, music or books.[3]

This leads to some explosive conclusions: top managers are successful because they happen to be in the right place at the right time. They mostly are not better than those who competed with them for the top position. They also influence the success of

companies much less than it is believed in the financial market. In addition, there are so-called Halo and Matthew Effects, meaning that 'the rich become richer and the poor become poorer'. The lucky ones receive – because they are allegedly so capable – more and better resources, higher promotion and attention. This makes their shine even brighter, and unjustifiably so. They are more and more convinced of themselves and accept to be celebrated as stars. They assign mistakes to others, become unwilling to learn and resistant to advice. And the subordinates do not dare say anything against it. They know that critical advice is perceived as disloyalty by autocratic superiors. As a result, CEO stars increase the pressure on the board to increase their bonuses – also as a safeguard against times when they are out of luck and are no longer able to maintain the appearance of great achievements. The result is growing income inequality between the few top earners and the rest of the population.

> The success of companies is often accredited solely to the top management, who subsequently tend to hubris.

As a consequence, hubris of managers arises. Hubris is defined as 'the abuse of power by individuals who are overconfident and, on gaining positions of power, benefit themselves to the detriment of other members of the community'.[4] Hubris reinforces the tendency to enrich oneself at the cost of others. It also reinforces incentives to take excessive risks. Acquisitions are a good example. In at least half of all cases, they prove to be wrong decisions in the long term. An extensive literature on mergers and acquisitions makes it clear that management's overestimation of their own abilities is usually responsible for such failures.[5]

Focal Random Selection Mitigates Hubris

Admittedly, hubris as a result of success – be it wrongly attributed or earned – is a human characteristic. A certain degree of a CEO's overconfidence or narcissism might even be necessary to foster innovations.[6] But can anything be done against hubris? Corporate governance instruments, in particular board control, might help.[7] We suggest an additional and provocative solution: returning to an old and successful procedure that has unfortunately fallen into oblivion – focal selection by lot.[8] In classical Athens and medieval Venice, political positions were filled in a mixed procedure of lot procedures and targeted selection. In the Middle Age other Italian city-states, such as Florence or Bologna, also used elements of lotteries to determine their executive during their great period. In the 18th century, chairs at the University of Basel were chosen by lot from a list of three candidates.[9]

Recently, the discussion about random procedures has been revived, for example in politics in the form of a third chamber consisting of randomly selected citizens. It should enable many interests to be represented in the decision-making bodies and counteract concentration of power and the loss of legitimacy of the political and economic elites.[10] This idea could also be transferred to business companies in several ways. Companies could install a second chamber in the supervisory board, which would be formed according to the lottery principle in order to give shareholders a vote.[11] Companies could also apply a certain kind of random selection with the nomination of CEOs.

> A chamber consisting of randomly selected citizens is likely to represent many interests.

We suggested on the basis of a laboratory experiment to introduce focal random selection into business companies following the historical example of the University of Basel,[12] called *Wahl zu Dreyen*.[13] We showed that lotteries are an effective remedy to mitigate hubris of leaders. Three kinds of selection methods were compared in the experiment:

- In the *competitive treatment* condition, in each group the participant with the highest test score in a competence task was appointed as a group leader.
- In the *random treatment* condition, one of the six group members was randomly selected as a group leader.
- In the *partly random treatment* condition, the three highest performing individuals were preselected, and then the group leader was randomly selected from these three individuals.

We found that when overconfident leaders were selected partly randomly, they were less prone to misusing their power. They made decisions that are more beneficial to other members of the group, compared to overconfident leaders chosen through the usual competitive selection process.

These results enrich the toolkit of leadership recruitment with a pioneering perspective and a novel instrument to mitigate hubris. We suggest that it helps efficiently to avoid the many problems we have experienced with overconfident managers. Moreover, lotteries offer some additional advantages: they prevent discrimination, for example, according to race, sex, age or origin. They give people a chance who would otherwise have a bad hand. Quotas become superfluous. Creative outsiders gain easier access to influential positions. Women might encourage women to apply leadership positions.[14] Lot-

Impulses for Practice

- Star CEOs convey to the public the idea that the performance of a company depends only on the top management though, in fact, success only to a small extent can be attributed to the abilities of its CEO.
- As a consequence, hubris of managers may arise, which inflicts serious damage on their companies.
- Focal random selection – that is random selection after a preselection according to conventional criteria – dampens hubris and furthers pro-social behavior of leaders.
- The findings from the laboratory cannot be transferred directly to practice. Nevertheless, it would be worthwhile to make cautious attempts in the selection of leaders.

teries protect against favoritism and 'old boys' networks'. It is not worth investing in lobbying, manipulation or other attempts to gain influence if the lottery decides.

Disadvantages of Focal Random Selection

Of course, there are also disadvantages of focal random selection. The most common objection is that the lot does not distinguish between capable and incapable candidates. This objection is less relevant when drawing lots from a preselected pool of capable candidates. One can assume that with a careful preselection those who have made it to the 'short list' have a high level of competence. This is the reason why in our experiment we applied focal random selection after a preselection according to conventional criteria. We also demonstrated in a theoretical model that under realistic assumptions with focal random selection there is a tradeoff between the competence of the selected leader and hubris. This is the reason why recruitment consultants will not lose their jobs when focal random selections are applied. The better they work in preselecting a shortlist of candidates, the more important is the advantage of focal random selection.

Another disadvantage refers to the concern of many people that random selection is 'irrational' or 'arbitrary'. However, seemingly rational decisions are often marred by prejudices, cronyism, nepotism, concentration of power, Matthew Effects, or biases.[15] In such cases, the rationality of decision processes is a façade, and an intentionally random decision may be more rational.

Conclusion

"Power tends to corrupt, and absolute power corrupts absolutely," the historian Lord Acton once said.[16] The idea of 'CEOs by lot' is a bold one to overcome this problem. We expect that it can be applied as successfully as it was in ancient Greece and in the Republic of Venice. We would be glad if we could encourage some innovative companies to integrate the idea of focal random selection in an experimental way into their toolkit of leadership recruitment.

Abstract

Hubris is defined as overconfidence combined with a tendency to abuse the power by CEOs or group leaders. Individuals affected with hubris tend to invest money in highly risky projects or claim exorbitant compensations to the detriment of others. A central factor fostering hubris is success in a competitive selection process. The successful applicant tends to attribute success to his or her own competence – a perspective that is usually reinforced by journalists and the public. Drawing on historical examples, we propose to randomly select the winner out of a pool of eligible candidates that were preselected by a conventional screening process. The random component makes sure that a successful candidate cannot attribute the success of a company to his or her competence only. As a consequence, these individuals will be less prone to hubris. In a laboratory experiment we indeed find that group leaders that are selected by a combination of competence selection and lot, compared to those selected by competence selection only, claim less money for themselves.

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Female Leaders by Lot

Why focal random selection brings more women to the top

Margit Osterloh

Inequality in the labor market between women and men still persist to a high extent though women today are better educated than men. The reason is not only discrimination but also women's aversion to competition on average. In order to motivate more women to throw their hats into the ring, an unusual method is proposed: focal random selection.

Women today are better qualified than ever before. On average, they have a better formal education and achieve higher scores than men. However, despite legal gender equality factual inequality between men and women is substantial, not only in terms of women's underrepresentation in leadership positions but also in terms of income inequality. These differences can only partly be explained by factors such as age differences.

Traditional approaches in gender economics focus on the *demand side*. On the one hand, they take into account different living conditions of men and women. On the other hand, they consider discrimination of professional women. For instance, a famous experiment demonstrated that significantly fewer female contestants were selected as members of symphony orchestras compared to a situation when contestants played anonymously behind a screen.[1] In addition to direct – often unconscious – discrimination, statistical discrimination plays a role. It arises when employers lack detailed information about relevant characteristics of an individual. As a consequence, they go by what they know about average characteristics of the group that an individual belongs to. For example, employers assume that women with children are not prepared to work overtime if needed. Regardless of whether this assumption holds for a specific woman, this may result in discriminating practices based on stereotypes. As a result, the much debated 'glass ceiling' effect arises, which hinders high-performing women from advancing to leadership positions.[2]

Women Shy Away from Competition

Recently, gender economics emphasizes not only the demand side but also the *supply side* of the labor market. It has been studied in particular by the so-called behavioral economics or economic psychology. Different preferences and characteristics of men and women relevant to labor markets are explored.[3] In the spotlight are competitive behaviors. In a number of laboratory and field experiments it has been demonstrated that women – especially high-performing women – are less willing to compete and, when forced to compete, achieve poorer performance than men. This difference has been shown to be the larger among adolescents, the better their school performance is. Whereas the willingness to compete is comparable among girls and boys with poor grades, high-ability girls are about 30 to 40 percentage points less likely to compete compared to boys.[4] Females are particularly unwilling to compete when competing against males. In all-girl groups the gender gap in willingness to compete largely disappears.

> Women and girls are particularly unwilling to compete when competing against males.

There are several explanations for this phenomenon. On the one hand, explanations focus on psychological differences in preferences, which nevertheless are influenced by various cultural factors.[5]

1. Differences in self-esteem have been suggested. Compared to women, men tend to overestimate their abilities, for instance, with respect to their trading performance. Data analysis of a large brokerage firm revealed that men traded 45 percent more than did women, resulting in poor portfolio outcomes.[6]
2. Women are more risk-averse compared to men. This has been shown both in laboratory and field experiments.[7]
3. Women are supposed to be more anxious about negative feedback than men.

statistical discrimination
Employers have only fragmentary information about the productivity of their individual employees. Therefore, they use representative social statistics of groups (e. g., nationality, age, gender, social background, religion, level of qualification) to judge the characteristics of group members. Thus, group characteristics have an effect independent of the actual individual characteristic. Employees whose actual productivity lies above (below) that level, have too low (too high) wages.

4. Niederle and Vesterlund found in their influential experiment that women are genuinely less willing to compete than men, independent of risk preference, self-esteem and feedback aversion.[8]

Some authors have attributed the aforementioned differences to genetic influences, however, social roles seem to be more relevant.[9]

On the other hand, explanations focus on social norms and socially determined stereotypes.[10] They are not only externally imposed, but also lead to self-stereotyping and internalized identity norms. The newly emerging 'identity economics' argues that 'psychic costs' arise when deviating from identity norms.[11] With respect to gender roles, successful men are well received, whereas – especially in male-dominated domains – successful women risk being punished with disapproval, particularly by men. Mathematics is an example of these male-dominated domains. This would explain why compared to boys, high-ability girls are especially less inclined to compete in mathematics, at least in co-educational schools.[12] Notably, especially girls in puberty are peculiarly susceptible to approval and disapproval of their classmates. Worries about losing approval may also explain why women are less willing to negotiate and to make demands. Men prefer to work with women who do not negotiate their salaries, which women internalize as part of their identity. Consequently, it was found that less than 10 percent of female graduates (compared to more than 50 percent of male graduates) try to negotiate to improve their first job offers.[13] The relevance of identity norms is also evident in the fact that women are less satisfied, report arguing more frequently and are more likely to have divorce when their incomes exceed their husbands'. Therefore, many women reduce their labor force participation once they earn more than their partners.[14] By doing so, women conform with the identity norm according to which men should be the breadwinners. In a similar vein, comparisons between actual and reported incomes showed that women underreport and men overreport their incomes when women's share of total couple income surpassed 40 percent.[15]

> For men success is positively correlated with approval, but successful women often have to fear loss of sympathy rather than praise.

The self-stereotyping is reinforced by the so-called stereotype threat, i. e., threat by negative stereotypes. It refers to the fear members of a social group feel that their behaviors would confirm negative stereotypes of their group. This may lead to self-fulfilling prophecy, i. e., to poorer performance following the cliché that 'women cannot park'. Similarly, when told beforehand that on average women are worse in mathematics than men, girls achieve poorer scores in mathematics. Field experiments reveal that when assigned to a female professor, female students delivered better performance in mathematics and natural sciences and were more likely to choose these subjects as their majors. No such effect was found among male students.[16] Women's aversion to competition as well as poorer performance disappear in female-type tasks.[17] Women are also unaffected when they are among themselves, e. g., in sex-segregated classes and matrilineal societies, in which they are in higher power positions.[18] Under these conditions, negative (self-)stereotyping and stereotype can be assumed to be less salient.

Reducing the Competition between Men and Women

What to do if particularly high-ability women shy away from 'throwing their hats into the ring'? When they are participating in competitions to a lesser extent than men, women stand a poor chance of increasing their share of leadership positions. One possibility is to address (statistical) discrimination on the demand side by reducing role stereotypes.[19] However, this would be time-intensive. Reducing competition in organizations might be more effective in the short or medium term. This implies that interventions target current preferences and role expectations and, therefore, the self-selection of female leaders. According to the empirical findings described above, more high-ability women thus should be motivated to apply for leadership positions. This kind of interventions would counteract the lack of female candidates, as complained by many HR practitioners.[20]

The most controversial intervention to reduce competitions between men and women are gender quotas, as introduced for political elections and appointments of supervisory board members in several countries. However, gender quotas are unpopular. The qualification level of boards is feared to be lowered. Empirical findings suggest this fear to be unfounded. First, with respect to political elections, quotas have been shown to raise the formal qualification level of elected male and female politicians.[21] Second, laboratory experiments demonstrate that the introduction of gender quotas more than doubles the share of women who voluntarily chose to compete up to 64 percent in total. Especially high-ability women self-select into competition under these conditions.[22] Notwithstanding, gender quotas have the disadvantage that they might be perceived as reverse discrimination against men, contributing to criticism of 'gender obsession'.

This disadvantage can be avoided by using focal random selection instead of gender quotas to reduce competition. Focal

Impulses for Practice

- To encourage more women to apply for executive positions, we do not only have to reduce discrimination, but also take into account the aversion of high-performing women in particular towards competion.
- Quotas serve to reduce competition. They are effective, but still not popular.
- Setting up focal random selection from a shortlist of appropriate candidates may motivate more women to 'throw their hat into the ring'.

matrilineal societies
are societies that classify individuals by their maternal descent (matrilineal), e. g., the inheritage of rank, title and properties. With marriage, the husband becomes part of the family of his wife, but he will stay a member of his mother's kin. The wife has a prominent position in society, without the presence of a matriarchy.

Matthew Effect
This term was introduced by the sociologist Robert K. Merton in 1968. He used it to describe the phenomenon in academic life that well-known authors are more likely to become even better known as they are often asked to write further publications and their work is also cited more often.

random selection – i. e., drawing a lot after a careful preselection of candidates – can be proceeded following the historical example of the selection of professors in Basel (see the article by Katja Rost and Malte Doehne in this issue): First, in a conventional preselection, a shortlist consisting of suitable candidates is made along with the announcement that the vacant position is drawn by lot from the shortlist.

Which are the advantages of this procedure? On the one hand, women who are on the shortlist would not suffer from direct and statistical discrimination (see the article by Katja Rost, Joël Berger and Margit Osterloh in this issue). On the other hand, more women are expected to forward their applications in the final round through this process. The downplay of competition is likely to motivate them to throw their hat into the ring.[23] The objection concerning the reverse discrimination against men would be overcome.

> Women selected by lot would bear lower identity costs with respect to the traditional female role norms.

What is the background of this expectation? Selection by lot deals with psychological and sociological differences in behavior between men and women described above. First, the problem that successful women in a male-dominated environment are disliked would be reduced.[24] Women selected by lot would bear lower identity costs with respect to the traditional female role norms. Men would suffer less from not winning because losing in a lottery does not mean losing one's face. Cooperation between winners and losers would be facilitated. Husbands and partners would accept their selection with fewer negative feelings because their male role is not challenged. Second, as shown by the selection in Basel, the introduction of random selection would motivate those people to apply who 'are humble enough not to think themselves as superior to all others'.[25] This would counteract low self-confidence often attributed to women. Lastly, selection by lot would reduce women's greater anxiety concerning negative feedbacks.

The objection that 'the best' would not be selected by lot can be met by two arguments.

1. Due to women's aversion to competition, which on average is higher than men's, only a small number of high-ability and talented women applies for top positions so far. As a consequence, the pool of suitable persons is not sufficiently exploited. This imbalance is reinforced by the Matthew Effect (see the article by Chengwen Liu in this issue), so that it is not true that with conventional selection methods always 'the best' reaches the top.
2. Thanks to a careful preselection, selected top candidates may meet different performance criteria, but all on the shortlist would have the necessary qualification for the vacant post. The better the preselection works, the smaller is the difference between candidates with respect to suitability. Therefore, HR practitioners should not worry about losing their job by focal random selections – the opposite is likely to be true.

Conclusion

To motivate high-ability women to run for leadership positions, new and unusual ideas are warranted. Women's dramatic underrepresentation at top levels still exists despite their excellent qualification and despite numerous equality and diversity programs. One of the most important reasons is that especially high-performing women are less willing to compete in male-typed domains. They have to bear psychic costs, which men are spared: For men, success is positively correlated with approval, whereas for women, the opposite is often the case, especially in male-dominated contexts.[26] We suggest that in order to make it easier for women to 'throw their hat into the ring', competition within the ring should be eliminated by lot.[27] As demonstrated by Katja Rost and Joël Berger in this issue, reducing the competition by lot leads to less antisocial behavior among persons who tend to overestimate themselves. Female leadership by lot, therefore, is a bold but promising idea which in the meantime has been tested successfully.[28]

Abstract

Today women are highly qualified. Yet there are significant differences between women and men in the labor market. Until recently, research to explain these differences was devoted to the side of organizations. Today behavioral economics focuses on another reason: the aversion of many women to entering competiton with men, and thus self-selection. To motivate women to enter the race we recommend a procedure that was applied successfully in the past, namely focused randomisation. A two-stage procedure is proposed. In the first step a shortlist of suitable candidates is made or generated by conventional measures. In the second step a lottery is applied to select the winner. This procedure mitigates role conflicts of female leaders. It therefore will help to motivate more women to throw their hat into the ring.

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Making Use of Unplanned Events

The influence of random events on the success of managers

Petra Arenberg

Random events are often seen by management as mere nuisances that disrupt plans and thwart strategies. This article uses scientific findings to show how unexpected events trigger automatic responses in the thinking, feeling, and acting of managers, and how opportunities from random occurrences can be systematically included in management practice, and how risks can be averted.

Coincidences are more than unexpected occurrences, because they influence the thinking and acting of managers and thereby favour or inhibit success. However, in leadership development or leadership competence seminars, managers' internal processes often go unmentioned. Such an omission is a missed opportunity, as the subjective interpretation of events has an impact on the performance motivation, self-efficacy expectations, and innovative capacity of managers, and thus, influences the future of the company.

> Subjective interpretation of random events affects motivation and innovative capacity.

Various theories and approaches explain thinking and behavioral patterns in connection with random events. This article examines the topic primarily from the perspectives of learning, attribution, and control theory. This is grounded on two assumptions: thinking, feeling, and decision-making depend both on managers' past experiences of random events and on their openness to alternative points of view.

How Managers Explain Chance

People do not believe that things happen truly at random. They think causally and look for explanations. Such explanations are known as causal attributions. Whenever something happens at random or a failure occurs, managers look for an answer to the *question why* especially intensely: 'Why was my team not given this important contract? Why did the board fill this vacancy with an external applicant?'

These attempts at fathoming the causes or conditions of events in the manner of a scientist are discussed in the area of everyday or laypeople's theorizing. Heider[1] assumed that they arise from a need to be in control.

The conclusions drawn from the presumed causes of successes or failures influence the *performance of managers*. Having mastered a situation feels good and motivates, whereas a perceived failure is demotivating. This causes expectations for the future, such as, 'The performance bonus announced by me has driven sales figures upwards in the short term, so in future …'. When the next crisis comes, confidence in one's own abilities is higher.

This phenomenon is explained scientifically by Weiner[2] by means of an attributional theory of achievement motivation. He explains how such causal attributions can motivate or demotivate through the emotions triggered. This happens primarily with events that are unexpected, negative, or of particular importance. Convictions are then formed through an analysis of causes. Figure 1 shows how emotions arise from random (negative) events and connected emotions.

The causes thus constructed can be assigned to various dimensions. Weiner distinguishes the dimensions of location, stability over time, and controllability. In the *location dimension*, an internal cause would be, for instance, the ability of a person: 'I'm a brilliant communicator and know how to convince my negotiating partners.' An external cause might be random: 'I was lucky because my competitors blew their pitch.' Looking at the *dimension stability over time*, an explanation of instability might be 'I worked until I was exhausted', whereas a causal explanation of stability might be in knowing, 'I've been a player on this market for years; it's obvious we got the contract.' The *dimension controllability* distinguishes between controllable and uncontrollable causes. Random chance, good luck, and bad luck are uncontrollable, while one's own efforts are controllable.

> Optimists attribute successes to themselves, pessimists blame themselves for failures. Changes of perspective are possible.

attribution
A term from social psychology describing the process by which an individual draws conclusions about the particular attributes or causes of an action or event. Making such attributions helps individuals make sense of events and believe themselves to be in control of their surroundings.

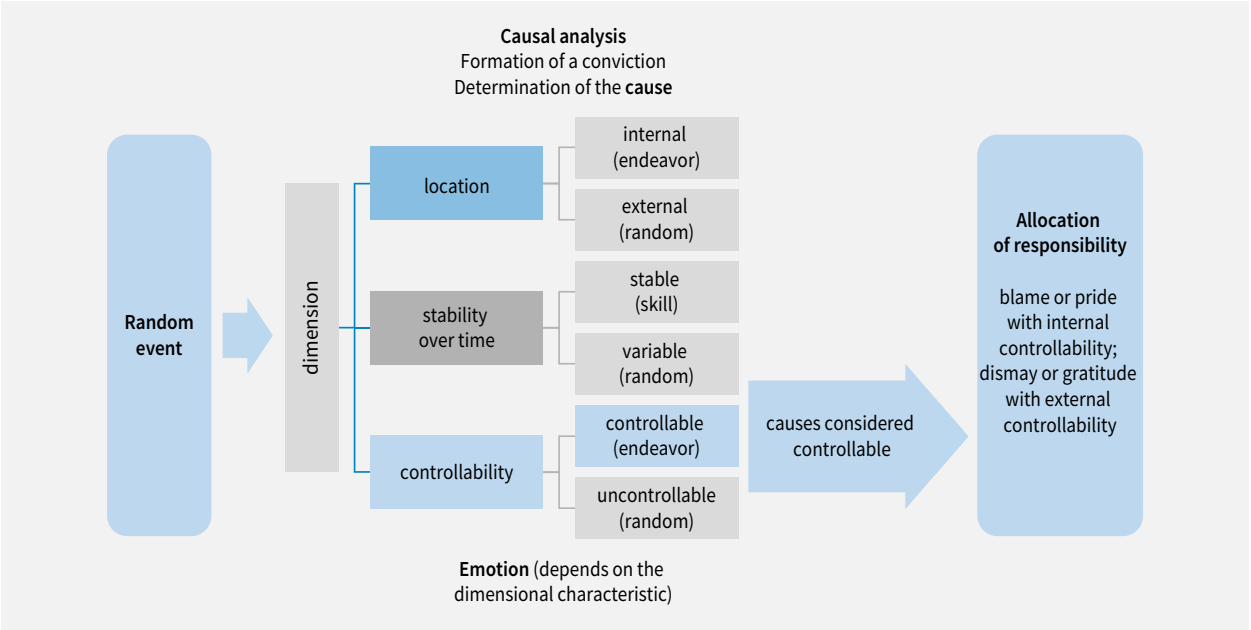

Fig. 1: Development of emotions after random events (according to Weiner)

An individual's mode of thinking in analysing causes often follows the same *attribution pattern*. Optimistic and successful people attribute failures largely to external, unstable, and uncontrollable causes and successes to internal, stable, and controllable causes. Pessimists do the exact opposite. This means that optimists perceive themselves as the source of their success, while pessimists attribute failures to themselves.[3]

Thus, managers can become optimists or pessimists through their way of thinking and the emotions they experience. But this is not an immutable fate. To bring about change, this article first explains the errors (in thinking) made. Subsequently, changes of perspective can lead to success through chance events.

Serious Errors in Analysing Causes

Usually, the search for causes does not happen consciously but is an automatic process. People are systematically prone to making grave errors in this.[4] An overview of the typical errors of managers in analysing random events is given in figure 2.

One fallacy that managers may commit is to overestimate their own powers and to underestimate the powers of chance. This happens particularly in situations that are strongly determined by random events, such as games of chance. People tend to believe that their control over a situation is much greater than is objectively probable. Evidence of this illusion of control was shown in studies by Langer.[5] People exhibited inappropriate levels of self-confidence, the more familiar and involved they were with the situation, the more competition there was and the more choices they had. Nevertheless, by believing in themselves managers may act much more successfully in crises than colleagues with a realistic or pessimistic outlook.

Carelessness and over-optimism towards random events can, as already mentioned, lead to erroneous management decisions.[6] The illusion of having everything under control seems to become risky particularly in speculative areas such as the stock exchange or in taking investment decisions.[7] If, in addition, there is a lack of control on the part of the organization, there is a threat of serious risk. Errors based on one's own experiences are often misjudged. People are largely immune to objective assessments.[8]

The risk inherent in excessive optimism is manifest in leaders' risk management. As a result of the illusion of invulnerability, managers fail to appreciate hazards, ignore risks, and do not even consider the possibility of failure. This is based solely on the belief that they have everything under control and are sure that nothing untoward will happen to them and/or the corporation or company. If a random disruptive event then occurs – say, the market collapses or the stock market crashes – there is often too little time to react or insufficient resources for adjustment.

Vulnerability to markets, competitors, or superiors give rise to negative feelings. To avoid these feelings, possible *random events are ignored and systematically underestimated*. Managers make this typical error when they attempt to deduce that events are controlled by their thinking. They construct narratives linking diverse events that may have been completely independent of each other. This in turn leads to an illusion of control and a belief in the predictability of the future. Here, managers not only link events, but also change their own conceptions of and convictions about things. 'I had already thought that …' Such utterances help them believe that they had noticed the earlier signs heralding a later event. This facilitates the idea that something random or sudden had in fact been foreseen and that everything is fine and still under control. As professional

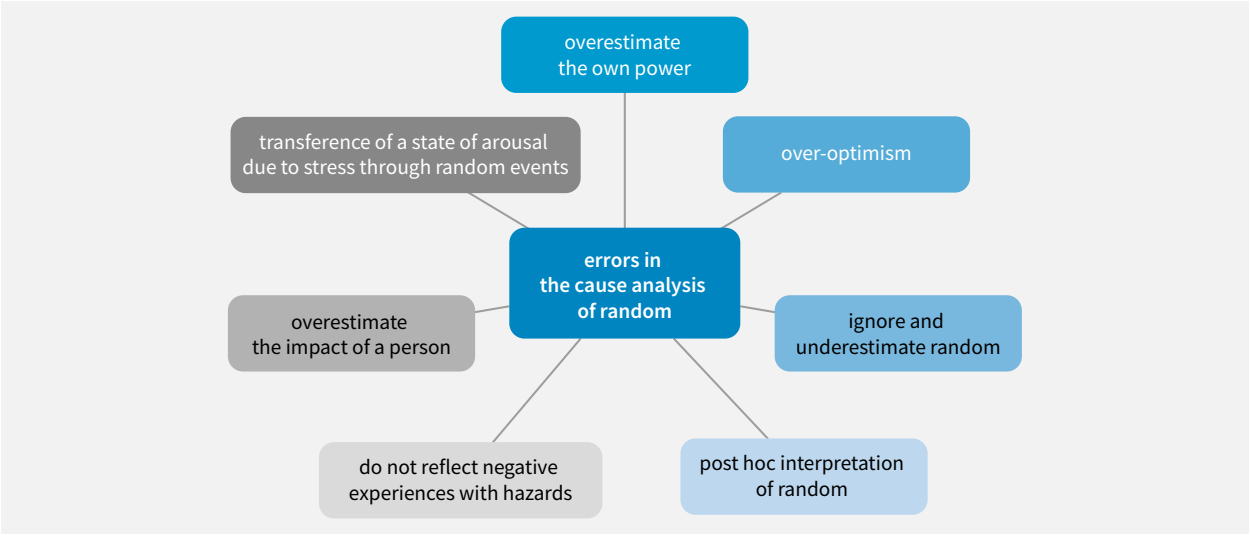

Fig. 2: Errors in causal analysis of random events

life becomes increasingly complex and unclear through digitization, globalization, and pluralization, the idea that they are able to control and foresee events gives managers the feeling of security they need. This phenomenon is known as cognized control.[9]

Erroneous analyses can also occur through the *retrospective reinterpretation* of a random event. This phenomenon is known as retrospective control.[10] But why do managers change the past in their thoughts? Because fears for the future are less marked when they believe that they were in control of the previous event. Research findings indicate that people are more contented, mentally healthier, and more creative when they believe that they are in control.[11]

> People are more contented, mentally healthier, and more creative when they believe that they are in control.

The experience of random events can be formative. Some groups of people in companies can be particularly affected by the *experience of uncontrollability* in the case of random events if they do not reflect on them in a fundamental way. When a young manager or somebody in a new position encounters something unexpected limiting his or her ability to control things for the first time, this triggers cognition about control. This can be thoughts like 'No sooner have I been promoted than I get to know my limits …', 'Shown up as a failure right at the start! If this keeps happening to me …'. Where an individual has had that experience a number of times, these patterns of thinking become entrenched. If things go badly, this may lead to control deprivation.

How often random events occur and loss of control is felt is of particular relevance to managers. They begin by responding with reactance,[12] an attempt to restore their freedom of action and to remove the perceived loss of control. If this fails, the manager will experience his or her actions as pointless and give up. Control-deprived managers may encounter a phenomenon that Seligman[13] called 'learned helplessness'. As a result of negative experiences with random events, the motivation to control events declines drastically. Managers now perceive random events as something threatening and limiting.

Errors in attributing causes to events are not limited to individuals but have also been found in working teams. These erroneous causal attributions can develop into a company culture of a *collective perception of control*. The normative behavior of entire teams may be subject to this exaggerated optimism and become a strategy, expressed in the motto 'Who dares wins'.

Another frequent error is to overestimate the influence of the individual. The causes of an unforeseen event are perceived to lie within the individual: in his or her abilities, personality traits, or attitudes. The considerable pressure that may be ex-

cognized control
(German: *kognizierte Kontrolle*) is defined as the belief that one is able to bring about desired states of affairs and avoid or reduce undesired ones.

retrospective control
is a form of 'cognized control' – the belief that one was in control of a stressful situation already experienced.

control deprivation
(a term from psychology): loss of control

reactance
There are different scientific definitions of reactance. The term was introduced in 1966 by social psychologist Jack W. Brehm. Reactance refers to our often doing the exact opposite of what is expected of us in situations of great mental strain or in response to prohibitions.

erted by his or her surroundings or by a particular situation does not receive sufficient attention, is partly blanked out, or is dismissed as unimportant: 'Oh, he's always been careless …' This overestimation of an individual's influence on events is known as fundamental attribution error.[14]

Another phenomenon arises in this context. Managers acting in uncertain work and market environments marked by unforeseen events are often constantly under pressure. In such situations, erroneous conclusions may be drawn by transfer of arousal,[15] a phenomenon demonstrated in various studies. The physiological response in adapting to stress is a high concentration of stress hormones such as cortisol, adrenalin, and noradrenalin in the organism. Managers often attribute the consequent state of arousal to people working with them, such as colleagues and subordinates. That is, they believe the negative arousal to be caused by other people and not by the situation.

Recognizing Random Events as Opportunities

Considerable opportunities are hidden in random events, since it is of particular importance to managers to influence the future and the successes it contains. People in leadership positions who view the future optimistically think they can master unforeseen events, because they believe they have everything under control. This confidence motivates their staff, and they are seen as good managers. Optimists about the future believe that they can determine events by their own behavior and so actively bring about their company's success. These *self-efficacy expectations*[16] are now seen as relevant for success in entrepreneurship and innovation and are considered key competences.

> Chance events have led to revolutionary innovations like the discovery of penicillin.

Chance events have led to revolutionary discoveries. Fleming discovered penicillin when he returned from his holidays. An unwashed Petri dish contained a fungus that had killed off all the bacteria cultured there. This happy chance was favoured by the fact that there was a swimming pool in the basement of the hospital, so humidity in the building was high. Any other employee might just have thrown away the spoiled sample, but Fleming's mind was prepared for chance events. After many years of research, he had the requisite sensitivity to recognize the opportunity that chance had afforded him. As Pasteur aptly remarked: "Chance only favours the mind which is prepared."[17]

fundamental attribution error
A fundamental attribution error creates a distortion effect. While an agent believes his or her behavior is influenced by the situation, somebody observing that agent attributes the motivation for his or her behavior to the agent's personality.

synectics
A method for problem-solving, similar to brainstorming.

Impulses for Practice

- Promote an organizational culture in which people reflect on their subjective assumptions about decisions and events.
- Practice the ability to self-reflect.
- Motivate others by giving feedback: reinforce the internal attribution of successes to employees' actions, and thereby increase self-efficacy expectations.
- Have someone play devil's advocate when making important decisions.
- Change people's perspectives with worst-case scenarios, creative techniques, and alternative questions.

Research into creativity has been studying this phenomenon for a long time, for instance, through Guildford's theory on *divergent thinking*.[18] By divergent thinking, he means a creative way of thinking which produces several solutions to a problem, as opposed to convergent thinking, which looks for only one solution without any leeway. This openness presupposes sensitivity to problems. It enables creative, innovative thinking and is a condition for creative solutions and innovation.

There are now many creative techniques which simulate or provoke chance events. These allow managers to activate their divergent thinking. Various methods also exist for groups, such as synectics. Their procedures integrate random events and are now part and parcel of innovation management and workshops.

Opportunities for creating a happy chance can also occur through a change of perspective. If managers ask themselves the questions presented in figure 3, their way of thinking will change.

Integrating Random Events in Decision-Making Behavior

How can random events usefully be integrated into decision-making behavior? The roots of thinking and decision making, and thus, of causal attributions are culturally conditioned.[19]

Perspective for random events	Questions
Random as a motor of change	What is it good for? What does it serve for? What could we do or consider instead?
Random as a learning resource	What can we learn from it? What can we do even better? What new factors, alternatives, perspectives does it offer?
Random as range for decisions	How can we decide in a smart, situation-specific, innovative way? What other possibilities, reasons or conditions are there?

Fig. 3: Questions for changing one's perspective on chance

Furthermore, causal attributions are influenced by experiences over the courses of working lives. People often explain successes and failures subjectively by attribution patterns. However, patterns of thinking can be changed; therapeutic interventions are already available, and training has proved effective.[20]

Companies can foster positive causal analyses by establishing a feedback culture in which successes at work are attributed internally to managers' actions, so that managers' self-efficacy expectations are confirmed. In leadership development, it is possible to start processes that create role models and encourage changes of perspective. Alternative questions, worst-case scenarios, and creative techniques systematically include random events in the organizational culture and broaden employees' thinking.

Abstract

Coincidences have an enormous influence on the thinking, motivation, and optimism of managers. Nevertheless, coincidences are given too little attention in management and research. In working practice, it is important to recognize that random events have far-reaching consequences. They influence important decisions and performance and promote or inhibit the company's business success. Systematic adjustments in the organization and in the thinking and behavior of managers can change perspectives, recognize risks, identify market opportunities, and drive innovations.

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Chance as a Guarantee of Progress

A plea for unintentional discovery

Hans A. Wüthrich

Leadership experiments that radically question the dogmas and standards of the management profession have proven to be powerful random generators. They require playful curiosity and the courage to try something that contradicts one's experience. Openness to unintentional discovery offers opportunities for further developing leadership qualities.

"The more systematically a person proceeds, the more effectively chance hits them."

Friedrich Dürrenmatt

Executives daily experience and complain about a lack of predictability and a consequent inability to plan. Unexpected things happen in companies and their environment for which we lack rational and causal interpretations. The acronym VUCA, standing for volatility, uncertainty, complexity, and ambiguity, provides an approach to explaining the increasingly coincidental. Intellectually, we recognize chance as a reality, but in action we react to it as 'more of the same'. The more unstable and unplannable the situation becomes, the more we look for certainties, for instance, through refined planning techniques or more precise specifications. As a result, organizations are increasingly mutating into highly efficient producers of false certainties which are primarily concerned with themselves. Due to training and experience, we find it difficult to accept not knowing and to develop confidence in chance. We also lack methods for provoking chance discoveries and for drawing intelligent conclusions from them. Literature on this topic refers to such methods as the principle of serendipity. Therefore, we have an issue not with recognition but with implementation.

> Intellectually, we recognize chance as reality, but in action we react to it as 'more of the same'.

Using Leadership Experiments as Random Generators

In our several years of experience with action research, leadership experiments have proven to be effective random genera-

principle of serendipity
The accidental observation of something not originally sought, which turns out to be a new and surprising discovery.

tors. These open-ended initiatives and interventions have the potential to discover the coincidental, the surprising, and the unexpected and to improve the quality of leadership with this type of insight.[1] When designing leadership experiments, it is helpful to mistrust the self-evident and the dogmatic and instead risk what is counterintuitive and contradicts training and human understanding. The following examples illustrate how experiments can be used to make discoveries by chance and how to take advantage of them in leadership work.

Chance discovery 1: the added value of professional incompetence

Managers are expected to shape and develop their areas of responsibility. They have to formulate strategies, define suitable organizational and operational structures, and provide appropriate management tools. Their doctrine almost dogmatically postulates that well-founded specialist knowledge is an indispensable prerequisite for good leadership. In other words, leadership is unimaginable without proven professional competence.

We were able to make some interesting counterintuitive chance discoveries with an experiment titled Reversing Leadership Roles, which was carried out several times. In the experiment, the members of a management body decide to swap their areas of responsibility for, say, six months. The finance manager takes over production, the production manager marketing, the marketing manager purchasing, and the purchasing manager finance. The role swap includes full operational responsibility.

Due to their obvious lack of specialist skills, the managers are no longer in a position to guide by an advantage in knowledge as they are accustomed to. They are forced to lead by questions and not by answers. They have to trust their direct subordinates and create added value through social competence. One such manager described her experience: “I had to trust the specialists completely and could therefore concentrate on process control. So, I made sure that recriminations were dispensed with and energy was focused on finding solutions. In this way, all experts were meaningfully involved and were able to articulate their ideas openly in an environment free of fear. During meetings, I consistently led through questions, and I tried to ensure that real dialogues could develop, and a struggle for the best solutions became possible.”

In contrast to the classic understanding of leadership, the nonspecialist manager was able and indeed obliged to see herself primarily as an enabler. Her contribution was to focus on the quality of interpersonal interactions and promote the development of a pronounced culture of relationship and responsibility. In any case, the lack of expertise prevents a dangerous drift into micromanagement and the associated risk of depriving the employees of their responsibilities.

Another manager emphasized: “I have learned that if you leave the technical side out and lead with trust, you can win over your employees.” There were also surprising chance discoveries among direct subordinates. The fact that the managers made themselves as vulnerable as possible meant that this situation was not exploited. Vulnerability provokes trust. As specialists, the direct subordinates felt empowered. They took on additional tasks and showed a high level of commitment.

> In contrast to the classic understanding of roles, the nonspecialist manager was obliged to see herself primarily as an enabler.

After six months and the return of the rotating managers to their original positions, it became clear that the experience of the experiment could not be ignored. The direct subordinates demanded more leeway from their original superiors, and the managers themselves were anxious to avoid micromanagement. The role swap did not lead to the feared chaos but to the valuable chance discovery that professional incompetence can also create added value. There is no doubt that technical expertise has its advantages. It forms the basis for a deeper understanding of context, creates opportunities for direct influence, and allows a manager to contribute to content. Technical expertise becomes problematic, however, if it is postulated dogmatically and leads to a culture of micromanagement.

The added value of professional incompetence is more indirectly recognizable. It forces the manager to focus on working on the system, designing the context, and thus, cultivating a culture of development of potential. The insight that professional incompetence promotes the development of potential is a valuable realization for work on leadership.

Chance discovery 2: the added value of deliberate purposelessness

Today, objectives are a standard component of professional leadership. Objectives ensure behavior that is in line with strategy, help to focus forces and resources, and convey security to employees. The greater the uncertainty grows, the more differentiated the objectives become. Monthly, weekly, or even daily objectives are formulated. The elaborate processes of setting and monitoring objectives consume a great deal of time and energy, and ever more companies are rethinking their approach to management by objectives.

In one administrative department, employees had to meet individually defined output targets as part of a management by objectives. A point system provided information on the degree to which these requirements had been met at all times. There were complaints about the high pressure on results and deadlines, the inflexible working conditions, and the lack of flexibility. In one section, these targets and output measurements were dispensed with in the interest of a system change. Employees were responsible for the distribution of tasks and quality control. An experiment titled Renouncing Objectives resulted in the chance discovery that the elimination of dysfunctional individual performance pressure had increased the overall productivity of the department. One of the reasons was that the team, now intrinsically motivated, began to question the entire process and to test alternatives.

intrinsically motivated
(lat. intrinsecus = on the inside, inwardly). Motivation that is induced from the incentives arising from a task or activity. Conversely, motivation conditioned by external incentives that are separable from the matter, such as rewards, penalties, and constraints, is defined as extrinsic.

incentive
A gratification for instance money, payment in kind, or travel offered by a company to its employees to encourage them to improve their performance.

The example shows that goals can contribute to increasing focus but can also restrict thinking and prevent coincidence. Coupling individual goals with incentives creates the risk that egoism and individualism are promoted in the organization. The added value of purposelessness lies, among other things, in the fact that playful curiosity and open-ended testing increase, and previously hidden opportunities become available. Those who have experienced this can help to consciously establish a leadership through pull instead of push to demand less and achieve more.

Chance discovery 3: the added value of lack of preparation

In the protestant work ethic, it is considered a duty to always go to a meeting well prepared. In addition to studying the files, managers in particular are expected to think through solutions to possible problems in advance. Thanks to this individual preparatory work, meetings can be conducted efficiently. This form of efficiency also has negative side effects. The more extensive the personal preparation is, the greater becomes the risk that the individual participants will try to push through the solutions they have developed in advance. In coaching sessions, I therefore recommend an experiment called Impromptu to managers: to bravely and consciously refrain from preparing and to participate in finding solutions in meetings in an open-minded and committed way.

> Organizations have knowledge from a broad spectrum of disciplines and a wealth of experience.What is missing is the ability to engage in dialogue.

A manager described her observations as follows: “Going to the meeting unprepared costs me a great deal of effort. I felt uncomfortable and insecure. During the meeting, I realized that I was listening more attentively, asking more questions, and participating more actively in the dialogue. My open-mindedness had a liberating effect. I was able to better understand the suggestions I heard and enrich them with my own ideas. It was exciting to see how a new solution was created through the process by combining individual contributions.” A chance discovery of this experiment is that preliminary mental work can act like a cognitive distortion or bias. It prevents a solution being found in a dialogic and integrative way and spontaneity being trusted. Trust in spontaneity is a crucial ability in today’s world. Nowadays, anyone who claims to know the solution to a complex problem has not recognized the problem. Sustainable solutions emerge from a diversity of knowledge and experience, which can be condensed into a high-quality solution through dialogue.[2] In organizations, we have knowledge from a broad spectrum of disciplines and a wealth of accumulated experience at our disposal. The bottleneck lies in the lack of the ability to engage in dialogue. Trained in a logic of difference that is based on the distinction between true and false, it is difficult for us to conduct real dialogues. In particular, we lack the ability to listen without evaluating. The awareness of cognitive distortions sharpened by the experiment forms an important basis for working on a culture of dialogue and ultimately improves the quality of decision-making.

Chance discovery 4: the added value of redundant waste

Pursuing the primary aim of efficiency, organizations consistently try to realize economies of scale and synergy effects. Units are merged and economies of scale are exploited. With increasing size and anonymity, however, coordination and interface problems and the associated levels of regulation also increase. Authentic and direct leadership is substituted by an indirect form. Diverse management instruments attempt to do justice to the increasing complexity. This leads to an increase in non-value-adding activities. An experiment called Dividing Cells aims to achieve the opposite: to reduce units, to accept duplications and redundancies, and to consciously avoid synergy effects. Following the principle of natural cell division, a unit is divided if, for example, its workforce exceeds 150 to 250 employees. One manager said: “We realized that reducing the size of the units means we know each other better, and this allows us to communicate directly and spontaneously. Dealings are much more personal and trusting.” The chance discovery that duplications can be highly effective is meaningful. It can stimulate future structural decisions and help to form relation-friendly units. The better relationship

Impulses for Practice

- It is important to recognize the accidental as a guarantee of progress and to consciously give chance a stage.
- It is necessary to expand one’s own leadership repertoire by accepting ignorance, tolerating the uncertain, and staying curious. Letting go enables personal development.
- Dogmas and standards are worth mistrusting. Risking what contradicts training and human understanding can irritate the organization and disturb its everyday routine.
- Leadership experiments are a means to be surprised and to find things that were not sought.

quality and mutual trust become, the fewer guidelines and leadership instruments are necessary. Size through growth is not an unalterable constant that has to be accepted. Size becomes a powerful strategy element that can be shaped by management.

Chance discovery 5: the added value of the unsuitable

When recruiting personnel, most companies follow the principle of accuracy of fit. The types of people employed are those who best meet the requirements profile. Particularly for highly specialized experts, there seems to be no alternative to this approach. The focus on accuracy of fit, however, limits variety and diversity. Requirements profiles represent the current imagination of the organization and harbor the risk that homophily is perpetuated and an intellectual monoculture develops. Employees made to measure only generate mediocrity. An experiment called Atypical Biographies offers an opportunity to use chance intelligently in personnel recruitment. An organization decides, for example, to fill 10 percent of its vacancies without preconceived results by looking instead for interesting, unique, unconventional, and superficially imperfect biographies.

> The foreign, nonconformist, and atypical leads to productive contradictions within the company.

One member of the board commented: "Every year, we recruit employees who are not compatible with us: outsiders who have no related training or experience and unconventional CVs. We see the added value of this practice in the fact that these people bring diversity to the organization. They challenge and irritate our managers by asking questions from other perspectives. They provoke productive contradictions and question what we take for granted."

Experiencing the unsuitable as suitable for the organization is the chance discovery in this experiment. The foreign, nonconformist and atypical leads to productive contradictions within the company. These in turn form the basis for progress and innovation. In the end, the unsuitable expands the scope for solutions. It increases the variety observed in the forms of action, state, and effect and improves organizational resilience. Insights of this kind expand the leadership repertoire and should encourage organizations to use recruitment more often as a means of corporate development.

Questioning management standards

What the five experimental settings have in common is that they all question dogmas and standards of management. It becomes apparent that expertise, targets, mental preparation, efficiency, and accuracy of fit also have dysfunctional consequences and side effects. Abandoning the dogmas enables chance discoveries that provide valuable impulses for differentiated and pattern-breaking work on leadership.

Abstract

It is not enough to rhetorically acknowledge unpredictability; an extension of the leadership repertoire is required. Hence, it is important to accept chance as a reality and to use it to progress in management and leadership. Leadership experiments prove to be effective random generators. The aim of these open-ended initiatives is to find things that were not sought. These random discoveries are decisive for the progress of leadership. They provide valuable impulses for additional intelligent work on personal leadership behavior and for the further development of the profession of management.

Discovering the Penicillin of Leadership

"Through foolishness to a bit more reason."

James March

Giving chance a chance requires skills that contradict the dominant management dogmas. Managers must accept ignorance, tolerate the uncertain, let go, develop a playful curiosity, and allow themselves to be surprised. They should relearn being allowed to marvel, being able to err, and daring to accept the counterintuitive. These are metacompetences for which we are insufficiently prepared and trained. Above all, managers require the competence to create intelligent experimental settings that have the potential to find something that was not being sought. This accidental something is crucial for the progress of leadership. Comparable to the many disruptive innovations that break new ground in the natural sciences, there is no alternative to chance in management theory. Leadership urgently needs these surprising discoveries, which lie outside the socialized world of experience. Organizations are therefore well advised to master the game on two 'stages'.[3] Acting on the 'front stage' is oriented towards external requirements. However, the 'backstage', which can be designed by the participants themselves, should be used as a laboratory to discover next practices[4] in experiments. We also need chance because predetermined, predictable leadership is simply too boring.

Perhaps Victor Hugo with his profound message in Les Misérables can help us to strengthen our confidence in this thing called chance: "The great coincidences are the law. The order of things cannot do without them."

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