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Lack of Diversity in Leadership: Could Selective Randomness Break the Deadlock?

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Abstract

The proportion of women and ethnic minorities in senior management remains indefensibly low. Radical ideas are therefore needed. This paper proposes one. It is to use a form of *selective randomness* -- random selection from among a pool of pre-chosen and qualified candidates -- as a new HRM tool. We argue this in two parts – an equity case and an efficiency case. First, selective randomness would ensure greater equity between the sexes and races over time; offer ‘rejection insurance’ to candidates wary of discrimination, and thereby mitigate the fear of failure; and encourage women and non-whites to enter tournaments. Second, we consider also the criterion of efficiency. The standard of candidates going into management would be raised; homophily would be reduced, thus improving diversity of people and ideas, and reducing the ‘chosen one’ factor. By using Jensen’s inequality from applied mathematics, we provide the first demonstration that random selection could act to improve organizational efficiency by raising the chance of an extraordinary manager being hired.

Keywords: Leadership, women, ethnicity, diversity, random selection.

1. INTRODUCTION

The call from global corporations for diversity in management is ubiquitous (e.g. Chevron, and Procter and Gamble, see Catalyst Group, 2015). Yet white men continue to be greatly overrepresented at the top of all kinds of hierarchies (Blau & Kahn, 2006; Lyness & Heilman, 2006; Leslie, King, Bradley & Hebl, 2008; Zweigenhaft & Domhoff, 2011; Ely, Ibarra & Kolb, 2011; Joshi, Son, & Roh, 2015; Leslie, Manchester & Dahm, 2017). The gender and race gap persists even though the landscape has been altered in several ways. Notably, diversity education and training has been widely introduced, since it became clear that discrimination comes at a high cost (e.g. Bezrukova, Jehn & Spell, 2012). In educational achievement, there is now a reverse gender-gap; school girls outperform boys in many subjects (Goldin, Katz & Kuziemko, 2006; OECD, 2015), and most college graduates in OECD countries are now female (Dawson, Kersley & Natella, 2014). Women and non-whites are more equally present in the workplace (Burns, Barton, & Kerby, 2012; Hekman, Johnson, Foo, & Yang, 2017), and there exists an indiscernible performance gap compared with white men. In examining a number of studies over 30 years, Joshi and colleagues concluded that sex differences in rewards were 14 times larger than sex differences in performance evaluations (Joshi, Son, & Roh, 2015). In contrast there is growing evidence that female representation in top management is associated with organizational performance (Dawson, Kersley & Natella, 2014; Paustian-Underdahl, Walker & Woehr, 2014), the pursuit of innovative strategies (Deszö & Ross, 2012), and more stable leadership in turbulent times (Rost & Osterloh, 2010).

This persistent gap in power is not merely inequitable -- it is also inefficient. Thus, new ideas are apparently needed. Here we propose one: it is to incorporate partly random selection (what we call *selective randomness*) from among a qualified pool of candidates into hiring practices for middle managers.

In this conceptual paper we explore why and how to apply a form of random selection as a tool to raise the number of candidates for middle management positions who are female or from ethnic minorities. First, we summarize to what extent random selection has been discussed in historical settings. Next, we present the equity case for selective randomness; for example, it may be used to encourage women and non-whites to enter tournaments, it offers ‘rejection insurance’ to those who fail, and, importantly, random selection can ensure equality of gender and race in management over time. Next, we present the efficiency case for selective randomness: how random selection might raise the standard of middle management candidates, reduce homophily to improve diversity of people and ideas, and lessen ‘the chosen one’ factor of hubris often common among leaders. Finally, we demonstrate how random selection can improve organizational efficiency using Jensen’s inequality from applied mathematics.

Random selection has a long though little-known history. It was successfully applied in ancient Athens and the “golden times” of Venice. Recently the idea has gained some attention in management research (Zeitoun, Osterloh & Frey, 2014; Liu & De Rond, 2016). We acknowledge that it is an unfamiliar concept; however, far-reaching ideas may be necessary to break the current deadlock. We offer a proposition that can be tested in organizations as well as in laboratory experiments.

2. AN INTRODUCTION TO RANDOM SELECTION

Random selection is rarely featured as a decision-making mechanism in business processes or the management literature (for an exception, see Zeitoun, Osterloh, & Frey, 2014). We are proposing that it should be used as a tool to select middle managers and mid-tier leaders out of a pre-selected pool. A key idea is that women and ethnic minorities may be more likely to enter the pool of candidates if the final selection mechanism is viewed as unbiased. Random selection helps psychologically to reduce the element of competition. Identity costs -- for

example being disliked, or being punished by candidates who were not selected -- are avoided; non-winners in random selection do not lose face.

Random selection has been around for a long time. It was first used as a political mechanism by the ancient Athenians and Venetians over two and a half thousand years ago (Buchstein & Jörke, 2007; Buchstein, 2010; Frey and Steiner, 2014; Zeitoun, Osterloh & Frey, 2014; Van Reybrouck, 2016). In the 18th century, the University of Basel appointed professors by drawing lots from among the top three candidates, thus helping to induce the most reputable individuals to stand for office (Burckhardt 1916; Stolz, 1986). A recent study in a similar setting examined the academic hiring process in four Italian universities after random selection was introduced; the authors found that candidates increased in number and the share of women rose (Checchi, De Poli & Rettore, 2017). Although its use has greatly declined, some institutions still use an element of randomness. For example, the Amish choose their leaders by random selection, and it is commonly adopted as a mechanism to select juries or decide tiebreaks in national and local elections (Zeitoun, Osterloh & Frey, 2014).

We focus on middle managers for three reasons. First, to reduce the gender and race gap at the top, we must first populate the middle. Second, and importantly, middle managers have been shown to be influential. They are essential in shaping and implementing people management practices (McConville & Holden, 1999; Purcell & Hutchinson, 2007). Employee attitudes, such as commitment and job satisfaction (Purcell & Hutchinson, 2007; Bäker & Goodall, 2017), and engagement and employee performance (Alfes, Truss, Soane, Rees & Gatenby, 2013), have been linked to the people management practices of middle managers. Finally, innovative techniques, such as the one suggested here, may currently be more acceptable and likely to gain approval for appointment into middle ranking positions rather than into CEO positions.

For this approach to work, an important requirement is the organization's commitment to adopt selective randomness over a significant period. Under a procedure of random

selection, time will be necessary to ensure that there is equal representation of gender and other minorities, encourage people to throw their hat into the ring, and make possible an analysis of individual and firm performance.

In the next section, we outline the possible ‘prizes’ from a random process of hiring, and then we explain the necessary stages prior to throwing the hypothetical dice.

3. RANDOM SELECTION AS A SUPPLY-SIDE TOOL: THE EQUITY CASE

3.1 Greater gender and racial equality over time

First, and of most relevance to this paper, random decisions can lead to egalitarian outcomes because they produce real representativeness in the population (McCormick, 2006). Groups, based on gender or ethnicity, are represented according to their significance in the general population (Frey & Steiner, 2014). Random sampling is used in national surveys for this reason. Random processes can reduce the power of interest groups that seek to influence political decisions by corrupt means (Hayek, 1979). If equal proportions are put into the pot then the ‘law of large numbers’ predicts that over time equality between white men, women and non-whites can be met using a process of random selection. For example, the predicted outcome is 50% chance of a male and 50% chance of a female (this generalizes to the group seeking more representation with the appropriate adjustment for their probabilities in the population). As suggested above, commitment to the process over time will ensure that the participating organisation benefits from gender or ethnic diversity and other forms of variability, such as personality, sexuality, creativity and talent (discussed further below).

3.2 Random selection offers ‘rejection insurance’

The first step towards winning a competition is to enter. We believe that random selection may encourage women and non-whites to more liberally throw their hat into leadership and management ring. Evidence suggests that women lack confidence compared

with men in certain circumstances (Lichtenstein, Fischhoff & Phillips, 1982; Beyer, 1990; Niederle & Vesterlund, 2007; Kay & Shipman, 2014). A tournament-entry gap exists between males and females mainly driven by women's preference not to compete, and also lower levels of self-confidence (Niederle & Vesterlund, 2007). If men and women are equally confident it has been found that there are no gender differences in competitive entry. This has been shown in the laboratory (Prize, 2010) as well as in the field (Garrat, Weinberger & Johnson, 2013).

Years of overt and covert discrimination might predispose women and minorities to be psychologically wary of entering competitions and more likely to suffer psychologically from failure or rejection (e.g. Steele, Spencer & Aronson, 2002). Opting to compete for management and leadership positions requires both self-confidence and confidence in the system to run fair tournaments.

Stereotype threat is a situation in which individuals are anxious to behave according to negative stereotypes about their social group which hinders their ability to perform at a high level. This may be the case even if the individual does not subscribe to the stereotype (Schmader & Johns, 2005; Inzlicht, 2011; Flore & Wicherts, 2015). An important feature of random selection is that it acts as 'rejection insurance' against these factors to moderate the stereotype threat effect (e.g. Steele, Spencer & Aronson, 2002; Rosette, Koval, Ma & Livingston, 2016). It does so in two key ways: first, throwing a dice makes the process balanced and open, and, therefore, not susceptible to undue influence through networks and interest groups, homophily or corruption, which will allow the process to induce greater trust. Second, if a candidate loses, he or she cannot 'blame themselves' for not winning, thus reducing the likelihood of internalizing failure into one's self-perception. This rejection insurance also arguably protects against any personal pressures enhanced through racial or gender stereotype and social identity threats.

4. RANDOM SELECTION: THE CASE FOR EFFICIENCY

4.1 Random selection encourages new talent and reduces homophily

Selecting people randomly may encourages new talent to enter the pool, especially those as mentioned above, who may be less inclined to enter competitions or elections because of low confidence or risk aversion (Beckmann & Menkhoff, 2008; Zeitoun, Osterloh, and Frey, 2014). Random selection also protects against homophily – hiring in one’s own image. A diverse talent pool will generate diversity of ideas and decisions (Fishkin & Farrar, 2005; Jeppesen & Lakhani, 2010). It may also lead to a ‘balanced portfolio’ by spreading risks as different kinds of people (and personalities) will be randomly selected (Zeitoun, Osterloh & Frey, 2014).

4.2 Random selection reduces ‘the chosen one’ factor

If random selection offers rejection insurance to protect women and ethnic minorities against internalizing failure, it also protects against the possibility of white men to overly internalize the positive influence of winning. Women are more likely than men to integrate negative feedback and less likely to incorporate positive information into their self-perception (Roberts & Nolen-Hoeksema, 1989; Dweck, 2000; Niederle & Vesterlund, 2007). Women are prone to attribute their success to luck than to their own performance (Beyer, 1990; Felder, Felder, Mauney, Hamrin & Dietz, 1995). Overconfidence in men is well documented (Lichtenstein, Fischhoff, & Phillips, 1982; Beyer 1990; Kay & Shipman, 2014) and it can be more pronounced when men undertake tasks that are considered to be masculine (Moore & Small, 2004); arguably men may consider leadership as such a task.

The characteristic of ‘hubris’ is often associated with organizational leaders (Hayward & Hambrick, 1997; Hiller & Hambrick, 2005). Individuals who regularly win tournaments may start to believe that they are ‘the chosen one’. Serial winners may overly-attribute their success to personal talent and under-represent the role of chance. An over confidence in one’s ability could result in homogeneity of ideas and decision-making, because too much weight is

placed on one's own opinions and less on others. This may be further enforced by hiring the fabled 'yes men' into the team.

The contrasting characteristic of 'humility' is viewed as being desirable in managers and leaders (Sally, 2002; Van Buren & Safferstone, 2009; Bridgewater, Kahn, & Goodall, 2011). Choosing managers by random selection will likely protect against 'the chosen one' factor and may engender greater humility and collegiality because of the greater weight placed on chance.

Thus, random processing can be used in many settings to correct and improve different kinds of procedures. Zeitoun, Osterloh, and Frey (2014) propose developing a corporate governance model using random selection procedures to appoint stakeholder representatives to corporate boards. Pluchino, Rapisarda & Garofalo (2011) suggest using partial random selection as a promotion strategy that protects against the Peter Principle.

4.3 Random selection improves organizational performance – an application of Jensen's Inequality¹

There is another, although little known, argument for random selection. A conceptual idea originating from the Danish mathematician Johan Jensen helps us understand how the random selection of managers (of either sex) might also contribute to organizational performance. Known today as 'Jensen's Inequality²' (Jensen, 1906), the mathematical idea describes the case when randomness is or is not desirable. The idea behind Jensen's Inequality can be conveyed in a numerical illustration. More generally, it is based on concepts of convexity and concavity in real-line mathematical analysis.

Imagine a world in which there are three kinds of leader or manager candidates. They come in three qualities: 'poor', 'good' and 'outstanding'. Assume that a selection panel can

¹ Thanks to Andrew Oswald for discussions on this topic.

² Jensen's inequality exploits the mathematical fact that a chord always lies above a convex curve.

always identify the good safe candidate, but that it is hard for the panel to distinguish between those who are poor and those who are outstanding (the latter may tend to look risky, ex ante). Thus, the safe outcome for the organisation can always be achieved by selecting the middle-quality manager, namely the one described here as good. Imagine, as in Table 1a, this produces for the organization the sales revenue total of \$3 million.

What happens if random selection is used instead? The advantage of this is that it creates an averaging effect. Over time, outstanding outcomes can outweigh the poor outcomes. This avoids the problem of repeatedly safe outcomes.

There are different cases. We begin with a benchmark example in which random selection is neither beneficial nor harmful. Following Table 1a, the proportional case, if the candidates are randomly drawn then one third of the time the manager will turn out to be poor and generate \$2 million revenue, and one third of the time the manager will be good and lead to \$3 million, and one third of the time the candidate will be outstanding and will produce \$4 million revenue. On average, therefore, it is possible to see that the organisation will produce revenue of \$3 million by using randomization. This is because the organisation gets an even spread of candidates through time. Put arithmetically, this is simply saying that $(2 + 3 + 4) / 3 = 3$. In this setting, therefore, where the success for the organisation depends in a smooth way on the quality of managers, random selection produces on average the same result as continually picking the safe candidate. Both strategies produce \$3 million on average. Here, random selection would have no special advantage.

In some instances, however, it is plausible to think that outstanding managers have special multiplying effects on the success of organisations. In this kind of situation, getting a high-quality manager, even occasionally, could be disproportionately important to the organisation. Table 1b is an illustration (this, mathematically, is the case of convexity). Now the argument for random selection is particularly strong. The exponential case suggests that if the candidates are randomly drawn then one third of the time the manager will turn out to be

poor and generate \$2 million revenue; a third of the time the manager will be good, which generates \$3 million; and a third of the time the candidate will be outstanding and will generate \$5 million revenue. Here, it is the nonlinearity -- the jump to 5 million -- that is the key. The organisation continues under random selection to get an even spread of candidates through time -- arithmetically, this is merely $(2 + 3 + 5) / 3 = 3.33$. But in this setting the organisation gets, on average, 11% higher revenue by exploiting the tool of randomization. *Random selection is optimal here because the occasional 'error' (appointing a weak manager) is more than outweighed by the occasional superb appointment of a manager who takes risks and earns large rewards for the organization.*

The purpose of the table and this numerical illustration is to try to explain a wider point. When the success of an organisation depends in an accelerating way (that is, mathematically, in a convex way) on managerial quality then there are potential benefits from the use of random selection. Arguably, such settings are also plausible ones, because managers have unusually disproportionate effects on their entire organization. Leaders' decisions can have greatly multiplied consequences.

4.4 Using random selection to encourage the reluctant leader

An additional benefit to random selection is pertinent in knowledge intensive firms. It is common in organisations where the core workers are experts and professionals, such as in professional service firms, to find an unwillingness to take up management positions (Empson & Langley, 2015). An offer to include candidates through a random process may encourage involvement; it may also act as a conscious-clearing exercise; 'at least I have showed willing by entering myself into the competition'.

5. THE PRACTICE OF RANDOM SELECTION AS A TOOL FOR HRM

5.1 Entry to the short-list

As has been suggested, random selection is best utilized as a method for hiring middle managers. Success will require an investment in time, in training and in the selection of appropriate candidates onto a short-list. Only once the short-list has been constructed should a process of random selection be used.

There are two possible ways that random selection could be executed. The first approach is random selection from a short-list in which there may not be an equal number of men, women and ethnically diverse candidates. Random selection would then, on average, replicate the same white male-female ratio that existed on the short-list, but could not then guarantee equality by gender or ethnicity. The second approach by design, is made up from the start with an agreed number of men, women and non-white candidates. In this latter case, a quota would be required.

Affirmative action and positive discrimination measures such as quotas are used in many countries to mitigate gender or racial bias. Quotas are sometimes put in place by governments or voluntarily adopted when other forms of encouragement or self-regulation have failed to alter gender or ethnic distributions (Krook, 2005; Dahlerup, 2006; Ryan, Haslam, Morgenroth, Rink, Stoker & Peters 2016; Sojo, Wood, Wood & Wheeler, 2016). A recent high-profile example is the requirement for all boards of public companies in Norway to include at least 40% women. An attempt by the UK government to impose a voluntary obligation of 25% female board membership on all public companies by 2015 marginally failed (only 20% was met)³.

The first of the above approaches to selection into the pool involves conventional procedures; for example, the position may be advertised internally, or a committee may choose,

³ Adams (2016) believes more research is needed to fully understand the benefits of board diversity.

or managers might ‘tap the shoulders’ of potential candidates and encourage them to consider the position. Under this condition one could hope that ample gender and racial diversity would be facilitated but there would be no rule on numbers. The evidence suggests that under these conditions talented women and non-whites may be more likely to apply, and the perception of “reverse discrimination” and the crowding out of high-performing men will be reduced. Out of this pool, a random selection of the chosen candidate would eventually be made.

The second method of selection would be to use a gender- race-based quota system to ensure that there are the same number of male, female and non-white candidates in the pool: this may be 1x1x1, 2x2, or higher. Some organisations may lack ethnic representation more than gender and vice versa. Quotas seem empirically to work; they change the landscape by raising the profile of diversity and, concomitantly, increase female and non-white representation in the public and commercial sectors, without negatively affecting productivity (Jones, 2004; Chattopadhyay & Duflo, 2004; Powley, 2007; Balafoutas & Sutter, 2012; Niederle et al., 2014; Beaman, Chattopadhyay & Duflo, 2009).

Irrespective of which method of selection is chosen, candidates who enter the pool should, we believe, be approximately equal in their rank or position in the organisation and have equal approximate ability. This will help to ensure against potential ‘glass cliff’ scenarios (Ryan & Haslam, 2005; Ryan, Haslam, Morgenroth, Rink, Stoker, J. & Peters 2016), where, for example, women are inappropriately picked for a task and therefore fail -- a situation that increases negative stereotyping. The level of management knowledge and experience may vary between candidates, but this is not uncommon in any promotion. Inevitably, contestants’ personalities will differ. However, importantly, applicants should have extensive knowledge of the core business of the organisation (Goodall, 2011; Goodall & Baker, 2014).

Incentives may be necessary to attract candidates into the pool at the outset. Women and ethnic minorities in particular may lack trust in the organizational hierarchy based on its

previous behavior. Adequate management and leadership training and professional coaching should be available to candidates; this is we believe is important.

5.2 Randomly selecting into the post

Once the short-list has been finalized – whether by conventional methods of selection or through a quota system that guarantees equality of gender and race – the random selection of the candidate can occur. Trust is an important factor to ensure. Therefore, the process needs to be regulated and should happen in a public or semi-public setting.

6. DISCUSSION AND CONCLUSION

The tide has not turned for women or ethnic minorities in leadership. Indeed, it might be argued that numbers remain inexcusably low. For women and non-whites to become leaders, they must first become middle managers. Firms committed to diversity could choose to use affirmative action as a demand-side tool to ensure women are placed into management positions. However, this has associated costs. Unrepresented groups may be made to feel that they acquired the job merely because of their gender or race, and men may view it as unfair “reverse discrimination”, or another form of overt interest-group influence. Moreover, high-performing men may be crowded-out. Thus, affirmative action could result in the persistence of women’s and ethnic minority’s negative (self-)stereotyping with the attendant “identity costs”.

In this paper, we consider the introduction of an unusual supply-side measure to encourage women and diverse groups into management. We propose a new solution based on the use of random selection from among a pool of pre-chosen candidates. This might be called *selective randomness*.

The paper suggests that random selection could encourage more women and non-whites to throw their hat into the management ring because, in a sense, it avoids competitive fear within the ring. Crucially, we believe that random selection at the second stage would increase individuals' willingness to allow their names to go onto the short-list at the first stage, particularly those who may suffer from stereotype and social-identity threats. As a consequence, it mitigates the "identity costs" of falling "out of role" and offers "rejection insurance" against failure.

Choosing candidates fairly, through a type of random selection, also levels the field by reducing the influence of white male networks -- the psychologically safe options -- that often support men into and during promotion⁴. It also protects against the propensity for managers to feel that they are "the chosen one", thus encouraging greater humility and collegiality. We also explain above that the purported disadvantage of random selection -- of not identifying the most appropriate person -- needs to be balanced by considerations that "rational" selection processes are flawed, and that, under certain conditions, random selection can contribute in the long run to organizational performance. This latter point can be captured using a conceptual application of the mathematical theorem known as "Jensen's inequality".

This paper has limitations that offer opportunities for future research. First, there is apparently little or no empirical evidence on the effects of random selection in the field of race or gender policy. Such evidence is by necessity restricted because the application of random selection in this field is currently an unusual idea. Future endeavors may apply various methodologies to gather empirical evidence, starting with laboratory experiments and vignette studies, and continuing to in-depth case studies of real-world implementations.

Second, although random selection of management candidates represents a generic concept, its adoption needs to take into account the cultural subtleties in different countries.

⁴ In a study of academic hiring practices in 4 Italian universities, Checchi, De Poli & Rettore (2017) find that insider networks are reduced when random selection is used.

For instance, random selection procedures are likely to be accepted more readily in cultures that emphasize equality of opportunities. Where cultural beliefs associate random selection with “irrationality”, it may be helpful to emphasize the instrumental benefits of random selection procedures, especially when compared to conventional selection procedures that are often only partially “rational”.

Although the idea of selective randomness put forward in this paper may seem unconventional, we believe that the time is ripe for radical endeavors. It is clear that the gender and race gap is proving difficult to close. We hope our proposed innovation might be viewed as an opportunity.

TABLE 1

An illustration of the theoretical case for random selection and how it depends on the output consequences of different kinds of leaders or managers (an application of Jensen's Inequality)

**Table 1a
The simple proportional case***

<i>Leader/manager type</i>	<i>Organisational output</i>
Poor	2 million revenue
Good	3 million revenue
Outstanding	4 million revenue

*In this case, leaders have smooth linear effects on the success of the organisation.

**Table 1b
The exponential case****

<i>Leader/manager type</i>	<i>Organisational output</i>
Poor	2 million revenue
Good	3 million revenue
Outstanding	5 million revenue

**In this case, leaders have highly accelerating effects on the success of the organisation. Strictly speaking, the correct adjective (mathematically) would be 'convex' rather than exponential, but we use 'exponential' because it may be more widely understood.

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