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12 October 2012

Online at <https://mpra.ub.uni-muenchen.de/62939/>
MPRA Paper No. 62939, posted 18 Mar 2015 10:09 UTC

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October 12, 2012

Unpublished Manuscript

Researchgate DOI: [10.13140/2.1.4352.4162](https://doi.org/10.13140/2.1.4352.4162)

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Abstract

In an attempt to determine what drives people to undertake a particular action, research, analytics and discussion on motivation continues. Decades of research and published studies has yet to bring forth a unified theory of motivation. In the last decade, serial research has brought about some extraordinary and intriguing aspects regarding the effects of different types of motivation on performance and creativity. Prominent researchers encircling the field of study include Dan Ariely et.al, Susan Cain, Mihaly Czikzentmihalyi, Edward Deci, Sam Glucksberg, and Richard Ryan, analysts from the London School of Economics, Robert Eisenhower, Linda Shanock and more recently, Dan Pink. Although not universally in agreement, their findings suggest that extrinsic drives may have a negative impact on overall performance and creativity. The answer to the effects of drives on performance and creativity remains unclear, but it has not prevented a number of innovative organizations from structuring their reward systems, employee engagement, and team conceptions based on elements of a new operating system. This new operating system is based on the elements of autonomy, mastery and purpose, finding that traditional management instruments are antiquated. Incorporation of these three elements considers the latest discoveries, scientific research and evidenced-based findings. Some of these new work approaches include ROWE and the 20 percent rule. In this paper, the author intends to shed some light upon the relationship between drives, performance, creativity and introversion in the modern workforce.

Drives, Performance, Creativity and Introversion in the Modern Workplace

“Money isn't a natural part of anything we do. It's not a part of practicing medicine. You know, the natural thing to practicing medicine is healing people. Getting paid for it is unnatural, similarly with law and with any profession, teaching. So, maybe what happens is that what money does is, it disconnects people from the real point and purpose of their activity”.

Barry Schwartz, professor of Social Theory and Social Action at Swarthmore College in an interview with Paul Solman (Schwartz, 2010).

The candle task experiment (Duncker, 1945), a cognitive performance test measuring functional fixedness and its influence on a participant's problem solving capabilities was created by psychologist Karl Duncker in 1945. Duncker's thesis on problem solving defined functional fixedness as being a “mental block against using an object in a new way that is required to solve a problem” (Duncker, 1945). His experiment entailed placing participants in a room at a table which was against a wall. Atop the table was a candle, box of thumbtacks and a matchbox. Participants were requested to affix the lit candle on the wall so that the melting candle wax did not drip onto the table. Initially, participants attempted to attach the candle to the wall using the tacks. A few participants tried melting the bottom of the candle and sticking it to the wall. Others tried to melt the side of the candle and attach it to the wall. None of these solutions worked. The solution to the problem was to empty the tacks out of the box, attach the box to the wall with the thumbtacks, melt the bottom of the candle and place the lit candle in the box as a candle holder. Participants had difficulties solving the problem because of functional fixedness. Subjects would fail to see the usefulness of the box as other than a thumbtack box. The candle problem has been used and adapted by business (Maddux & Galinsky, 2009) and linguistics (Higgins & Chaires, 1980) researchers as well as experimental psychologists.

One notable experimental psychologist, a Professor Sam Glucksberg, currently at Princeton University, adapted Duncker's cognitive bias of functional fixedness to the motivational element of incentives, defined by Luthans as "anything that will alleviate a need and reduce a drive" (Luthans, 2011, p. 157). Professor Glucksberg's experiment (Glucksberg, 1962) studied the effect of financial incentives on solving the candle problem. Professor Glucksberg timed two groups of subjects on how long it would take to solve the candle problem. With the first group of subjects, he stated that he was establishing norms and averages for how much time it takes to solve the problem. No monetary award was offered to this group. To the second group, he offered money rewards from \$5.00 to \$20.00 to solve the candle problem in the shortest amount of time possible.

Money is the dominant organizational reward provided by organizations to drive the performance of employees and encourage their loyalty and retention (Luthans, 2011, p. 90). In fact, Newman and Hodgetts (Newman & Hodgetts, 1998) found that money is the primary motivator for employees and Stajkovic and Luthans performed a meta-analysis of 72 studies to find that it is a very effective positive reinforcement intervention strategy to improve performance (Stajkovic & Luthans, 2003). Thus, a monetary reward should have been a good incentive to solve the candle problem faster; however, Glucksberg's results found that the second group of subjects (those with the monetary awards) took longer (an average of 3.5 minutes) to solve the candle problem.

Glucksberg repeated the experiment but altered Duncker's presentation by removing the tacks from the box. Again, he divided the subjects into two groups with the same circumstances

and under the same conditions except for the tacks being out of the box. This time, the results were different. His observations found that with the tacks out of the box, the subjects found the solution faster than with the filled-boxes condition. The mode of presentation of the materials was crucial to the participants' success in the task. In other words, more subjects in both groups solved the problem faster, and those in the second group solved the problem faster than the first group. At the time, Glucksberg's concluded reasoning was defined in relation to neobehaviorist Clark Hull's now abandoned "drive reduction theory" (Dewey, 2007).

Glucksberg's results seem to defy the classic economic principle that changes in incentives influence human behavior in a predictable manner. Further, according to Skinner's Behaviorism (Skinner, 1938), a central concept in behaviorism is reinforcement (the monetary award) which was offered in Glucksberg's first experiment. The reinforcement should have been the heart of the behavioral control. Presumably, and intuitively, if desired behaviors were rewarded; the likelihood of those behaviors should have increased, but they did not.

Deci (Deci, 1970; 1975) found that in cognitive terms, the part that extrinsic rewards play such as money decreases the intrinsic motivation of subjects to perform a task. Measurement of intrinsic motivation was by time devoted to a task upon elimination of the award and in laboratory conditions. Notwithstanding, critical evaluations of these studies occurred through the years and one meta-analysis by Cameron and Pierce (Cameron & Pierce, 1994) of 96 experimental studies determined that generally, intrinsic motivation is not reduced by rewards. The disparity seems to derive from the difference schools of thought between behaviorists and cognitive evaluation theorists.

A notable experiment in 2005 by Ariely and colleagues (Ariely, Gneezy, Loewenstein, & Mazar, 2005), suggested that disproportionate rewards could occasionally yield supra-optimal motivation, causing a drop in performance. To determine if their premise was correct, they directed a set of tests at MIT, the University of Chicago, and rural India. Subjects in their research performed different tasks and received performance-contingent disbursements that varied, in sum, in relation to their usual levels of pay. With some important exceptions, they observed that extraordinary compensation levels can have damaging results on performance.

Ariely's study involved constructing a set of games requiring invention, creativity, motor skills and concentration power. These games were then given to the students. The study was set up with three levels of incentives: low, medium, and high. The students were then informed that if they achieved a high level of performance they would obtain a high reward. The findings from the study were quite surprising. Ariely and his colleagues found that if the games involved primarily motor skills, the higher the financial incentive offered, the higher the level of performance. However, if the games implied even the most rudimentary cognitive skills, the greater the reward, the lower the level of performance. In other words, the higher the promised reward, the more poorly the student performance. The author surmises that there is little wonder why it is so difficult to instill critical thinking cognitive skills into the students of so many professional disciplines.

Another enlightening study was conducted in 2009 by the London School of Economics and Political Science business analysts. 51 separate experimental studies were examined for financial incentives in employment relations. They discovered vast evidence that these

incentives may diminish an employee's normal disposition to complete a task and develop pleasure from doing so. Their conclusion was that financial incentives may have a negative impact on overall performance, and that performance-related compensation frequently does not inspire people to work more diligently. Rather, it oftentimes has an opposing effect and that businesses should be mindful that the provision of performance-related compensation could result in a net motivational decline across a team or organization. Accordingly, Dr. Bernd Irlenbusch from the LSE's Department of Management stated, "We find that financial incentives may indeed reduce intrinsic motivation and diminish ethical or other reasons for complying with workplace social norms such as fairness. As a consequence, the provision of incentives can result in a negative impact on overall performance" (Irlenbusch, 2011, para. 2).

There are, however, studies that cast uncertainty on these results. Robert Eisenhower and Linda Shanock (Eisenhower & Shanock, 2003) draw attention to some behavioral studies that stress this fact: when subjects are explicitly requested to find creative solutions, the financially motivated group had a better performance. Consequently, when individuals know they will be rewarded for creativity, the creativity will increase, and such individuals will obtain better results than those who are absent of a reward. A conceivable explanation is that individuals will seek creative and uncommon solutions with more involvement. Individuals perceive the task as requiring creativity and thus ascend to searching for innovative solutions. To achieve these results, however, requires informing participants that creativity (perhaps innovation) will be rewarded; otherwise they will explore only common solutions.

If creativity is the norm for reward, individual behavior will be focused on discovering creative solutions each time. Unfortunately, research shows that managers reward primarily on traditional performance and not creativity; therefore, employees believe that this type of performance is required (Eisenhower & Shanock, 2003). Although the promise of financial rewards can motivate individuals to engage in the painstaking process of informational searching, when employees have to develop creative solutions or to solve a problem, they will obtain better results if they are intrinsically motivated rather than being focused on receiving a reward.

The answer to the effects of drives on performance and creativity remains unclear, but it has not prevented a number of innovative organizations from structuring their reward systems, employee engagement, and team conceptions based on elements of a new operating system according to Daniel Pink (Pink, 2009). This new operating system is based on the elements of autonomy, mastery and purpose, finding that traditional management instruments are antiquated and aren't suited for the 21st century work environment. Incorporation of these three elements considers the latest discoveries, scientific research and evidenced-based findings. Some of these new work approaches include ROWE and the 20 percent rule.

In 2003, two of Best Buy's human resource employees, Cali Ressler and Jody Thompson were asked to create a functional flexible work program that would motivate the corporate office's workforce and increase their productivity. However, during the process, they soon discovered that wasn't what employees wanted. In addition, the flexible work program was fraught with complications and challenges. Changing strategies, Ressler and Thompson began

probing for something that would make the main office personnel more involved and exhilarating. After querying company employees, they concluded that the personnel concerned about flexing their hours. They found that employees realized for themselves that they were hired and paid to be results oriented and the hours they worked, flexible or not, was not as disconcerting as not achieving the desired results expected of them. What Ressler and Thompson did was develop what became known as the Results-Only Work Environment (ROWE). ROWE emphasizes providing workers the freedom and advancement to perform the work that best meets the business's critical needs and its clients in contrast to when or where the work is occurring (Kerrigan, 2012).

Ressler's and Thompson's ROWE system is practiced in over 20 North American companies with demonstrated results that include: increased commitment and productivity at work as well as increased job satisfaction and reduced staff turnover. Within their system, the inventors have several implementation techniques. Without elaboration on all the techniques, the author makes note of one relevant to this paper, "Reward employees based on results, not on how much time they put in at the office" (Ressler, 2008).

Another form of how intrinsic motivation (autonomy, master, purpose) can be used to improve workplace performance is Google's 20 percent Rule. Employees are able to use 20 percent of their work time for autonomous, personal projects, their team and the methods used. Of all the products that are produced by Google in one year, it is those that are created during the 20 percent rule time that represents almost 50 percent of their products. Similarly, the Australian company, Atlassian, is another example of yet another company who bases their work system

primarily on the element of autonomy. The company reported an increase of workplace performance after implementation (Pink, 2009).

These examples of Pink's three elements to increase workplace performance require that workers be allowed to achieve higher personal satisfaction in their work. It also requires employers to take heed to what the science of motivation is revealing: extrinsic motivators often don't work because they aren't compliant with 21st century work, and they stifle creativity and innovation, a key challenge facing organizations in today's highly competitive environment (Henry, 2001). This challenge, solving unique problems or creating something the world has never had before, depends profoundly on what creativity researcher Teresa Amabile calls the intrinsic motivation principle of creativity, which holds, in part: "Intrinsic motivation is conducive to creativity; controlling extrinsic motivation is detrimental to creativity" (Amabile, 1996).

Basically, creativity requires individuals to look at things differently (Tabak, 1997). Research has demonstrated that relative to the average person, creative people seem to be able to perform things better as in abstracting, imaging, synthesizing, recognizing patterns, and empathizing (Root-Bernstein & Root-Bernstein, 2000). They also tend to be relatively good at intuitive decision making, knowing how to take advantage of good ideas, and are able to break old paradigms or ways of thinking and make decisions that sometimes seem to fly in the face of rationality.

So who are these creative people? The nature of creativity was studied from 1956 to 1962 by the Institute of Personality Assessment and Research at the University of California (Feist, 1998). Researchers attempted to identify who the most outstanding creative individuals were and to establish what made these people different from everyone else. They gathered together individuals who had contributed immensely to their fields of endeavor and performed a battery of personality tests, problem-solving experiments, and probing questions. They did the same for individuals in the identical fields of endeavor but who were unambiguously less innovative individuals. Their findings, which were confirmed by future studies, were that people with the highest creativity tended to be introverts.

The findings did not clearly determine that introverts are necessarily more creative than extroverts; however, within a given group of extremely creative people who have been so throughout their lives, it is likely a number of them will be introverts. Author Susan Cain (Cain, 2012), whose work on introversion and shyness, believes there is an explanation that everyone can learn from: introverts prefer to work independently, and solitude can be a catalyst to innovation. If this is true, her explanation supports the desire to be self-directed (autonomy). It also implies that employers should be providing ample room for the most privacy, personal space, control over their physical environments, and freedom from interruption rather than continued use of highly cohesive groups and teams that often put pressure on individual members to conform and reach consensus, thus resulting in what social psychologist Irving Janis calls groupthink (Janis, 1972).

We have previously learned from Eisenhower and Shanock (Eisenhower & Shanock, 2003) that when people are explicitly requested to find creative solutions, the financially motivated group performs best. When individuals know they will be rewarded for creativity, the creativity increases and the individuals obtain better results than those who are absent of a reward. A conceivable explanation is that individuals will seek creative and uncommon solutions with more involvement but despite this fact, when employees have to develop creative solutions; better results are obtained if they are intrinsically motivated rather than being focused on receiving a reward.

Do introverts react differently to the prospect of rewards versus extroverts? Are they more susceptible to reward-seeking endeavors than extroverts? Susan Cain (Cain, 2012) states that scientists are exploring the idea that reward-sensitivity may, in fact, be what makes an extrovert an extrovert (Lucas & Diener, 2000). If indeed, extroverts are found to have a higher reward-sensitivity, is it possible that they are more likely to suffer Duncker's functional fixedness and cloud their creativity more so than introverts? Psychologist Daniel Nettle, in his book on personality, writes that introverts do have a "smaller response" (Nettle, 2007). If this is the case, are introverts less likely to suffer functional fixedness and to a lesser degree be influenced by extrinsic rewards? If so, are they able to be more creative in their work?

In review, it appears that offering rewards causes functional fixedness in solving cognitive problems although the mode of presentation of a problem can bring forth faster solutions. Further, there remains some disparity, in cognitive terms as to the extent extrinsic rewards affect intrinsic motivation despite repeated studies finding that high levels of rewards

decreases performance. There is also continued disparity as to whether intrinsic motivation is reduced by extrinsic financial rewards. What is known is that when it comes to creativity, if people are asked to clearly find creative solutions, those with financial drives improve their performance; however, better results are achieved if intrinsic motivators are used instead.

Finally, innovative companies are implementing the drives of autonomy, mastery and purpose to improve workforce performance. Although financial incentives remain the most popular tools used for motivating employees, employers need to heed what the science of motivation is revealing: extrinsic motivators often don't work because they aren't accommodating with work of the 21st century plus they stifle creativity and innovation, a key challenge facing organizations in today's highly competitive environment. Further, these same organizations need to focus on the development of the most creative and innovative people of their workforce and take a closer look at how they see the introverts within their organizations.

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