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Motivation through goal setting

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ABSTRACT

We study a principal agent model where agents derive a sense of pride from accomplishing production goals. As in classical models, the principal offers a pay-per-performance wage to the agent, determining the agent's extrinsic incentives. However, in our model, the principal uses goal setting policies as a tool to manage agents' intrinsic motivation. To capture the idea that different agents respond differently to different goals we introduce the concept of personal standards which determine what becomes challenging and rewarding to them, and hence the intensity of their intrinsic motivation to achieve goals. We show that, at the optimal contract, the agents' production, as well as the goals set by the principal, increase with the agents' personal standards. Moreover, we show that an intrinsically motivated agent gets higher surplus than an agent with no intrinsic motivation in the form of informational rents but an agent with a mid-ranged standard (and hence productivity) could end up being the one most satisfied. Therefore, our model can be helpful to explain some empirical findings in the literature of job satisfaction such as the so called "paradox of happiness".

The object of living is work, experience, and happiness. There is joy in work. All that money can do is buy us someone else's work in exchange for our own. There is no happiness except in the realization that we have accomplished something. Henry Ford, founder of the Ford Motor Company. (This and other Henry Ford quotes are available at http://www.iwise.com/R5gdr.)

1. Introduction

In 1968, the American Pulpwood Association became concerned about how to increase its loggers' productivity as mechanization alone was not increasing the productivity of its logging crews. Two Industrial Organization psychologists – Edwin A. Locke and Gary P. Latham – assured the firm's managers that they had found a way to increase productivity at no financial expense to anyone. The policy seemed too easy; it merely involved setting specific production goals for the loggers. The novelty was that these goals were wage irrelevant, in contrast with classical wage relevant goals such as bonuses. The psychologists argued that introducing a goal that was difficult but attainable, would increase the challenge of the job while making it clear to the workers what was expected from them. Although the managers were quite skeptical at the beginning, the results were surprising: the performance of logging crews increased 18% and the firm's profits rose as well.[1]

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[1] We can find this study in Latham and Locke (1979), which also includes similar empirical evidence for a case study with typists.

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This example was followed by many studies in the psychology literature on what is known as ''goal setting'' (e.g., Yukl & Latham, 1978; Shane, Locke, & Collins, 2003; Anderson, Dekker, & Sedatole, 2010).[2] The theory states that wage irrelevant goals are an important determinant of employees' motivation to work and hence affect their productivity (see Locke (1996) and Locke and Latham (2002) for a literature review). The effectiveness of goal-setting is very consistent across studies. According to Locke and Latham (2002) the probability that performance increase after a goal has been set is above 90%.

Although in principle we can think about standard explanations of the goal setting evidence, for instance, a goal may be an implicit benchmark for being retained or for future promotions, it is important to remark that there are numerous laboratory experiments showing that individuals who have been assigned specific wage irrelevant goals solve more arithmetic problems or assemble more tinker toys than do people without goals (see Locke, 1996). Therefore, this evidence indicates that there is an important component of individuals motivation through goal setting policies that cannot be explained with classical ''carrot and stick'' (i.e., wage and threat of fire) arguments.[3]

Our purpose in this paper is to take this motivation theory addressed in psychology and management and make it precise in standard economic theory. In particular, we propose a model where workers do have a sense of self-achievement and may care about pay-off irrelevant goals. This sense of achievement is different for workers with different personal standards, which is private information to them. In our model, a worker with a high personal standard can only be motivated to accomplish a sufficiently demanding goal.

Before describing the key elements of the model, we start by summarizing the main findings in the goal setting literature. The most important and robust finding is that the more difficult the goal is, the greater the achievement will be. This result applies as long as the individual is committed to the goal (i.e., he cares about it).[4] The reason why goals affect workers' achievement is that goals affect the challenge of the job and hence the satisfaction workers obtain from the work itself. As Judge (2000) says:

> *The most effective way an organization can promote job satisfaction of its employees is to enhance the mental challenge in their jobs, and the most consequential way most individuals can improve their own satisfaction is to seek out mentally challenging work* (Judge (2000, p. 107).

Therefore, goals are an important determinant of workers' satisfaction because they help develop a sense of achievement. According to the goal setting literature, goals serve as a reference point of self-satisfaction, with harder goals leading to better achievements.

Since goals are reference points, it is also plausible that a higher goal lowers the workers' satisfaction. In fact, supporting this reasoning, Mento, Klein, and Locke (1992) have found that those who produce the most, those with difficult goals, are the least satisfied.[5] The question then is why do people accept these goals? According to Locke and Latham (1990), Locke and Latham (2002), the driving force behind this result is that those people with high goals demand more from themselves, thus they are dissatisfied with less. Therefore, their personal standards are higher.[6] As Locke and Latham (1990) indicate:

> . . .*a person with higher standards has to accomplish more to feel that he or she has performed adequately or successfully than the person with lower standards* (Locke and Latham (1990, p. 242).

Bandura (1988) also argues that individuals use standards for judging the adequacy of their performance. Similarly, Erez and Zidon (1984) and Locke, Latham, and Erez (1988) provide experimental evidence that individuals only accept goals if they are higher than their personal standard. According to this evidence, the accomplishment of an easy goal can only be rewarding for those individuals with low personal standards. As we will see, this personal standards' idea is going to play a key role in our analysis.[7]

The previous findings are difficult to support with traditional economic models, such as the classical principal agent model, in which only the goals that are directly linked to the agents' wage (e.g., bonuses) affect their incentives to work. Our purpose here is to fill this gap by introducing goal setting into an economic model of managerial incentives. Therefore, we look at the following questions: Can a manager increase the workers' productivity by using goals that are linked to the job's challenge? How should the manager define the workers' goals? What are the determinants of job satisfaction?

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[2] In management literature, goal setting is known as ''management by objectives'' (MBO). Several studies find empirical evidence that MBO programs improve workers' performance (e.g., Ivancevich (1974), Bush (1998) and Mosley, Schutz, and Breyer (2001)).

[3] We can also think about other non-standard explanations of the loggers' evidence. For instance, goals may act as a peer pressure device increasing performance even if goals are wage irrelevant. Although we think that this could be an important issue of goal setting policies, here we focus on individual goal setting, where peer pressure cannot play a role. In fact, most of the experiments cited in Locke (1996) are individual goal setting experiments.

[4] The ability to attain a goal is also important for the goal setting effectiveness. However, in the present model we assume that an individual can always achieve a goal if he exerts a sufficiently high effort.

[5] This result applies for both, ''self-set'' and ''assigned'' goals. However, it is important to remark that through the paper we consider assigned goals instead of self-set goals. Therefore, people with difficult goals are people who have accepted jobs with high goals instead of people who have set a high goal for themselves in their jobs.

[6] Another example is that, even considering researchers with the same ability, we observe that some of them need to publish their papers in very high ranked journals in order to get a sense of self-achievement while others are just as happy publishing in low ranked journals.

[7] There are other results in the goal setting literature that we do not describe because they are beyond the scope of this paper, such as the definition of specific or explicit goals, the influence of the individual's self-confidence on the level of the goals accepted, or the importance of feedback showing progress for the effectiveness of the goal.