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The power of (no) recognition: Experimental evidence from the university classroom

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ABSTRACT

We study the effect of unannounced recognition on performance with a field experiment involving first-year Dutch university students attending tutorials as part of a compulsory course. Our treatment, given in randomly selected tutorial groups, was to publicly recognize students who scored within the top 30% of their respective group on the first of the two midterm exams. The overall treatment effect on the second midterm grade is 0.03*s* (*s* = grade standard deviation) for the recipients of recognition, and 0.15*s* for the non-recipients, both statistically insignificant. The effect for the non-recipients increases with class attendance (itself unaffected by our treatment) and proximity to the cutoff grade for recognition, reaching a significant 0.55*s* for the 23% of the non-recipients who attended at least 12 out of 13 classes and were within the first quartile of the distance to cutoff. We argue that conformity to performance norm is among the forces shaping the effects we observe.

1. Introduction

Recognition is one of the core practices in education. Our study presents experimental evidence on the effects of this practice on university student performance. There are (at least) three reasons why economists should be interested in the effect of recognition on student performance. *First*, because it is cheap, recognition may be a more efficient alternative to financial incentives for students and teachers, class size reduction, or extra academic support. Indeed, as Levitt et al. (2016) found from a series of experiments with Chicago school students, a symbolic award – a trophy and a photo on the wall in the class, costing about $3 – improved grade 2 to 5 students' test score by 0.12 of its standard deviation, on a par with the effect of financial incentives of up to $20.

Second, depending on how it is provided, recognition can affect not only average performance but also performance distribution. For instance, in Bradler et al.'s (2016) experiment, where recognition was given unannounced, it had a bigger effect on non-recipients' than recipients' output in a data entry task (0.5 of standard deviation for non-recipients vs. 0.2 for recipients). Chen et al. (2010), who provided unannounced performance feedback, found a similar effect: a decrease in output by those performing above the median, and a large increase by those below. On the other hand, when recognition was announced, as in Kosfeld and Neckermann's (2011) experiment, it triggered a higher response from the more able. Thus, when the goal is to improve the performance of their currently underachieving students, unannounced recognition could be a solution.

Third, the university is a relatively tough environment for the effect of recognition to be felt, because there are other, powerful and universally applicable, reasons for students to do well, such as passing the course and, ultimately, graduating. Whether recognition continues to affect performance in this environment is, therefore, an open question. In fact, the positive effect of recognition for grade 2–5 students in Levitt et al. (2016) declines into insignificance for more senior, grade 6–8 students, precisely when those reasons become more important. Carried out in an environment where powerful incentives other than recognition are present, our study differs from the existing literature on the subject much of which excludes these incentives by designing one-off jobs with fixed pay and no career concerns (Kosfeld and Neckermann, 2011; Kube et al., 2012; Bradler et al., 2016).

In Harrison and List's (2004) classification, ours is a "natural field experiment", run in an environment that was perfectly normal for the participants, and without them knowing they were part of an experiment. Our sample consists of 368 first-year undergraduate students at a Dutch university attending the compulsory microeconomics course, of whom 342 have a complete grade record. Everyone had to pass this course in order to continue with their studies; hence the presence of strong, uniform incentives to

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do well. Before the start of the academic year, and without our involvement, these students were randomly divided into 15 tutorial groups each taught by an experienced teaching assistant (TA). Our treatment took place between the two midterm exams during the course, each carrying an equal weight in the final grade (10%). The treatment, administered through and on behalf of the TAs in 8 randomly chosen tutorial groups, was to give public recognition to students whose grade for the first midterm exam was within the top 30% of their group. We instructed the TAs in the control groups not to express any praise or criticism of the first midterm results in their groups.

We find that, compared to their peers in the control groups, the recipients of recognition in the treatment groups did no better. At the same time, the non-recipients who attended enough classes and were not too far off the cutoff grade for recognition significantly improved their performance, by up to 0.55 of the grade's standard deviation. Our findings taken together imply that unannounced recognition may be an effective motivational tool even when other powerful incentives are present, but its effectiveness depends on the characteristics of the target audience, such as class attendance and past performance, that it cannot influence.

In the rest of the paper, we review the existing literature (Section 2), present our theoretical predictions (Section 3), describe our experiment (Section 4) and data (Section 5) as well as relevant estimation issues. We report our empirical results in Sections 6 and 7, and conclude with a summary of our findings and their implications in Section 8.

2. Existing literature and our study

Our study builds on three related literatures – theories predicting recognition to affect performance, empirical research outside and within academia. Starting with the theories, recognition may affect performance by nurturing reciprocity between the agent and the principal (Akerlof, 1982), acting as a signal for the altruistic principal (Levine, 1998), providing information on the social norm to which people tend to conform (Bernheim, 1994) and activating status concerns (Moldovanu et al., 2007). However, our setting is not a principal-agent one: student effort does not directly affect teacher wealth, so teachers do not have a material incentive to stimulate it. This leaves two theoretical possibilities – conformity to the norm, and status concerns.

Under status concerns, recognition increases effort when receiving it leads to a higher status within a certain social group. Thus, Moldovanu et al.'s (2007) "contests for status" model predicts that in the presence of recognition every agent will put in effort proportionate to his or her ability rank within the group, whereas in the absence of recognition everyone's effort will be zero. Crucial for this mechanism to work is the expectation that recognition will occur in the future. Hence, effort response to an unannounced and one-off recognition could not be explained by status concerns.[1]

Conformity to the norm – a tendency to align actions to "a single standard of behavior despite heterogeneous preferences" (Bernheim, 1994, p. 841) – affects effort through coarse feedback on relative performance that comes in the form of recognition. Having received this feedback, the agents may adjust their beliefs about the norm and hence their effort choices. Specifically, the recipients of recognition will learn that they are more likely to have met the norm than they thought before, and will consequently reduce their effort, whereas the non-recipients will find themselves less likely to comply with the norm, and will therefore work harder. The opposite effort responses by the recipients and non-recipients of recognition is a marker of norm conformity being at work, distinguishing it from status concerns which encourage high performers to work progressively harder.

Turning to empirical research, providing recognition is found to affect a wide range of behaviors both within and outside the principal-agent setting: prosocial actions (Grant and Gino, 2010), voluntary contributions (Chen et al., 2010), and output in short-term jobs (Kosfeld and Neckermann, 2011; Kube et al., 2012; Bradler et al., 2016). One lesson from this research, which links it to the theory and is relevant for our experimental design, is that the effect of recognition depends on whether it is announced or spontaneous. Announced recognition affects behavior through status concerns, resulting in stronger responses from the already high performers (Kosfeld and Neckermann, 2011), whereas unannounced (or spontaneous) recognition, operating via conformity to the norm (Bradler et al., 2016), will have a larger effect on the relatively under-performing.

Lastly, there is research on recognition and feedback given to students. A large meta-study by Kluger and DeNisi (1996) concludes that, compared to other types of feedback (corrective feedback, progress assessments, reinforcement), "praise", the more frequently used term for recognition, is relatively ineffective. Hattie and Timperley (2007) mention the decrease in intrinsic motivation and dearth of learning-related information as the reasons for the lack of the effect. Based on their review of recognition literature, Marzano et al. (2001) (pp. 53–58) conclude that recognition works best when it is given personally and for reaching a specified performance target. More recent studies on feedback generally find that it positively affects average student performance (Azmat and Iriberri, 2010; Tran and Zeckhauser, 2012; Bandiera et al., 2015). They also find the effects of feedback to differ across the performance outcome distribution, being more pronounced for students who performed above and below average before receiving feedback.

The existing literature informs our theory and experimental design. Our theory rests on the idea of conformity to the norm, which predicts an effect of recognition through the provision of coarse feedback on relative performance. To try to isolate the influence of status concerns (even though it is hard to do so in the field), the recognition we give is unannounced. We give recognition based on a specified performance measure to all qualifying students, which is the best practice identified in the meta-studies in education psychology.

3. Theory and study hypotheses

As we want to investigate the effect of classroom recognition on subsequent performance, we apply the conformity to the norm theory – the only one applicable in our specific setting – to guide our empirical analysis and generate testable predictions. Assume agents in a group have a preference for conformity; that is, individual effort is positively affected by the performance norm in their group. The agents do not know precisely what the group norm is and base their effort choices on their beliefs about the norm. These beliefs are informed by signals each agent privately receives. Hence, all else equal, agents who initially received a low signal about the norm will work less hard than those who received a high signal. Feedback on relative performance in the form of recognition will correct the previously held beliefs about the norm and alter the effort choices as the result.

To formalize the norm beliefs update, we use the model from Bradler et al. (2016). In their model, the agent's optimal effort increases in the group norm γ. The effort directly and noiselessly

[1] While true in theory, this statement may not hold in some field settings, including ours, in which recognition may still be given in the future, albeit by a different person and for a different performance outcome. Then, once observed, the practice of recognition may increase the competitiveness of the environment, which in turn may trigger status concerns. We thank the anonymous referee for making this point.

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