



Quitting and peer effects at work[☆]



Julie Rosaz^a, Robert Slonim^{b,c}, Marie Claire Villeval^{c,d,e,f,*}

^a University of Montpellier 1, LAMETA, avenue Raymond Dugrand - Site Richter C.S. 79606, F-34960 Montpellier Cedex 2, France

^b University of Sydney, Department of Economics, Merewether Building, NSW 2006, Sydney, Australia

^c IZA, Bonn, Germany

^d University of Lyon, Lyon F-69007, France

^e CNRS, GATE Lyon St Etienne, 93 Chemin des Mouilles Ecully F-69130, France

^f Department of Public Finance, University of Innsbruck, Austria

HIGHLIGHTS

- We study the influence of peers on the extensive margin of effort.
- We vary the feedback on the co-worker's output and the right to communicate.
- The presence of a peer causes workers to quit at more similar times.
- Peer effects derive from a sociability effect.

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ABSTRACT

This paper studies the influence of peers on the extensive margin of effort at work by means of a real-effort experiment in which subjects have to decide on the intensity of effort and when to stop working. Participants perform a task alone or in the presence of a peer. The feedback on the co-worker's output is manipulated and we vary whether the two workers can communicate. We find that when communication is allowed, the average productivity per unit of time and the quitting time are not increased but the presence of a peer causes workers to stay longer and to quit at more similar times. Peer effects on the extensive margin of effort derive more from a sociability effect, i.e. a reduction of the social distance between co-workers that could make the other's presence more valuable, than from performance or quitting time comparisons.

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* Corresponding author at: GATE, 93 Chemin des Mouilles, 69130, Ecully, France.

E-mail addresses: rosaz@lameta.univ-montp1.fr (J. Rosaz), robert.slonim@sydney.edu.au (R. Slonim), villeval@gate.cnrs.fr (M.C. Villeval).

1. Introduction

Labor economists are increasingly studying the influence of peers on individuals' work effort.¹ So far, the literature has focused almost exclusively on the impact of peers on individual productivity, i.e. the intensive margin of effort. However, there are reasons to believe that peers also influence the amount of time spent working, i.e. the extensive margin. Long working hours may be viewed by peers as a signal of seriousness. Deviating from this norm may be morally costly, but observing other workers quitting may reduce these non-pecuniary costs of quitting.² The extensive margin of effort may also be affected by performance comparisons of peers, leading the less able workers either to quit sooner because of discouragement or to work longer to compensate for more able workers (Eriksson et al., 2009; Fershtman and Gneezy, 2011).³ Moreover, the opportunity to socialize with peers may affect when workers quit because peers can make the work environment more pleasant and because peer's behavior may provide a salient reference point for the appropriate amount of time to work.

The major contribution of our study is to analyze the impact of peers on the extensive margin of effort. Specifically, we examine the time spent working and the difference in working time among peers in a real-effort laboratory experiment. In the experiment, workers are paid based on the number of mathematical questions answered correctly. After completing an initial compulsory work time, workers have to decide when to quit. Although our focus is on the extensive margin, we also observe the influence of peers on the intensive margin of effort that includes both the number of questions attempted and the number of correct answers per minute.⁴

We focus on whether people work longer alone or in the presence of a peer and on whether co-workers are more likely to have more similar quitting times when they have a choice over the intensity and the duration of the task. Besides examining the extensive margin, our study also varies from previous studies of peer effects by using a cognitively demanding task and using a payment scheme that consists of a fixed wage plus a small piece rate. In particular, we differ from Falk and Ichino (2006) who consider the intensity of effort when workers cannot choose when to quit. Their task has no cognitive requirement (stuffing envelopes); they pay a flat wage and they measure intensity by the number of envelopes stuffed while we take into account also the quality of output (i.e., correct answers) when we consider the intensive margin of effort.

Our second contribution is to examine the channels through which peer effects operate on the extensive margin of effort. The studies on the intensive margin suggest that peer effects can be conveyed by peer pressure, performance comparisons and sociability. *Peer pressure* is the moral pressure of being judged by one's peers (Kandel and

Lazear, 1992). Mas and Moretti (2009) offer evidence of its existence in a field study on supermarket cashiers. Although cashiers are paid a flat wage, the pressure from *being observed* increases productivity. Peer effects can also operate through *performance comparisons* by observing others' performance. For example, Falk and Ichino (2006) find that the mean output is higher when people work in pair than when working alone and that the standard deviation of output is smaller within- than between-pairs. Their results are consistent with those of Ichino and Maggi (2000) and with the literature showing how relative performance feedback influences effort through competitive preferences (e.g. Azmat and Iriberry, 2010; Charness et al., 2014). With performance pay, however, the evidence is mixed. Bandiera et al. (2005) show that under a piece-rate scheme, feedback on co-workers performance negatively affects productivity (see also Barankay, 2012 and Gill and Prowse, 2012), while Beugnot et al. (2013) find positive peer effects in social networks. Finally, *sociability* may be a vector of peer effects through the reduction in the social distance between employees. For example, Bandiera et al. (2010) find that the presence of a friend working nearby increases the productivity of less able workers, whereas working next to a non-friend co-worker has no impact (see also Guryan et al., 2009).

Our experiment distinguishes between three sources of peer effects on the extensive margin: i) the combination of peer pressure and comparisons on quitting times,⁵ ii) the combination of peer pressure and comparisons on productivity, and iii) sociability. First, peer pressure and comparisons on quitting times may impose a stigma related to quitting before others, as well as lower the moral costs of quitting after a peer has quit. Depending on the amount of time a worker would have worked in isolation compared to when their peer quits, the presence of a peer could increase or decrease the amount of time spent working. If a peer works longer than a worker would have worked in isolation, peer pressure and comparisons could lead the worker to work longer to avoid quitting first, whereas if a peer works less than a worker would have worked in isolation, then peer pressure and comparisons could lead the worker to quit soon after his peer quits as this becomes more socially acceptable. Second, the combination of peer pressure and comparisons of productivity could discourage the less able worker, leading him to quit sooner than when working alone. Alternatively, the less able worker may work longer to compensate for being less productive and earning less. Third, the possibility to communicate with peers, beyond observing a peer's performance and quitting decision, may reduce the social distance between co-workers and increase the pleasantness of the time spent working; co-workers may stay longer than when working in isolation, and quit together.

To distinguish these mechanisms, we compare four treatments. In the Single treatment, one subject works alone, so the quitting decision cannot be influenced by, or influence, anyone else. In three peer treatments, two participants start working at the same time. In the No Communication–No Feedback (NCNF) treatment, subjects see if and when their co-participant quits, but cannot observe her output nor communicate with her. By comparing this treatment with the Single treatment, we can identify whether the presence of a co-worker leads the first quitter to stop later and the co-worker to follow rapidly, which would indicate that peer effects on the extensive margin are driven by peer pressure on quitting time and comparisons of quitting time. The No Communication–Feedback (NCF) treatment is identical to NCNF, except that subjects are continuously informed on their co-worker's performance. By comparing this treatment with the previous ones, we can see whether peer effects on the extensive margin, if any, are driven by the combination of peer pressure on performance and comparisons of performance. The Communication–Feedback (CF) treatment is identical

¹ Kandel and Lazear (1992) provide an early theoretical study. Bandiera et al. (2005, 2010), Falk and Ichino (2006) and Mas and Moretti (2009) provide prominent examples of empirical tests.

² Organizational studies show that both supervisors and co-workers interpret spontaneously passive face-time (i.e. the amount of time an employee is merely seen at work) as informing on the employees' personal traits such as conscientiousness, dedication or initiative (Joyce, 2002; Kossek and Van Dyne, 2008; Elsbach et al., 2010). Studying the time spent volunteering for a charity in which participants could decide when to stop, Linardi and McConnell (2011) found that individuals avoid being the first to stop but are more likely to stop once others have done so.

³ Eriksson et al. (2009) observed that even when the gap in performance between two competitors is so large that the winner of a tournament is no longer in doubt, the underdogs never quit a competition. In an experiment where students had to run a race either side-by-side or alone, Fershtman and Gneezy (2011) have shown that higher incentives both increase participation and lead to more drop-outs, especially when children run side-by-side.

⁴ We use a laboratory experiment because it is difficult to identify peer effects with observational data due to the possible presence of correlated effects (Manski, 1993). Indeed, peers may have similar behavior not because they influence each other but because they face similar exogenous environmental characteristics or they have similar utility towards the working time (they have self-selected into the jobs). Laboratory experiments minimize these problems by randomly assigning individuals to treatments and groups.

⁵ Our design does not allow us to tease apart peer pressure (when being observed, like in Mas and Moretti, 2009) and social comparisons (when observing others without being observed) since in all of our peer conditions subjects are always simultaneously being observed by their peer and observing their peer.

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