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Cheating and social interactions. Evidence from a randomized experiment in a national evaluation program☆

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ABSTRACT

We investigate cheating behavior in school using a unique data set drawn from a national evaluation test. We exploit a randomized experiment to identify social interactions in the classroom and estimate a cheating social multiplier of about two, which is consistent with a change in students' achievements twice as large as the initial response. Cheating behavior is found to be more relevant in primary schools as compared to junior-high schools. We also show that cheating occurs mainly when teachers shirk or lower monitoring effort letting students exchange information and cooperate. Differences in the estimated effects are found in terms of social ties among classmates and social capital endowment in the territory.

"*It's seen as helping your friend out. If you ask people, they'd say it's not cheating. I have your back, you have mine.*" Senior student at Stuyvesant High School in Manhattan.

"*We want to be famous and successful, we think our colleagues are cutting corners, we'll be damned if we'll lose out to them, and some day, when we've made it, we'll be role models. But until then, give us a pass.*" Student at Harvard Graduate School of Education.
The New York Times, September 25, 2012

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1. Introduction

In many social and economic contexts, individuals often face the choice of adopting different types of opportunistic or even illicit behavior to increase their welfare, taking advantage of others for personal interests. Leaving aside violent crimes, there is abundant evidence indicating that cheating on taxes, free riding on public goods, claiming benefits without entitlement, bribing and corrupting public officials, abusing of drugs and drinking, smoking when not permitted, as well as other types of dishonest behaviors are widely diffuse phenomena in most countries (Kleven et al., 2011; Card and Giuliano, 2013).

In this paper, we focus our attention on a specific type of such fraudulent behavior, that is, cheating in the classroom during a national evaluation test. A number of papers report evidence that cheating has grown over the last decades, hand in hand with the more extensive use of testing programs (McCabe, 2005; Davis et al., 2009),[1] yet empirical evidence on the effects of cheating behavior on educational outcomes is scarce. Cheating can alter evaluators' ability to assess students' performance and the signaling role of grades (Anderman and Murdock, 2007). Cheating also raises a number of concerns, not just regarding its unfairness relative to those who do not cheat, but more generally regarding the externalities that are created on others (McCabe and Trevino, 1993; Carrell et al., 2008; Dee and Jacob, 2012). When cheating occurs, either because teachers discretionally help some students or let students exchange information and cooperate with each other, other students – who otherwise would have behaved honestly – feel that they cannot afford to be disadvantaged by those who cheat and may end up cheating too (Anderman and Murdock, 2007; Davis et al., 2009).[2] In this context, even an isolated cheating event may propagate through social interactions via a direct effect (i.e. private incentives to cheat) and an indirect effect on behaviors (i.e. a reaction to others cheating). The cheating outcome is amplified by the so-called social multiplier,[3] generating large differences in variance across different groups (i.e. school and classroom), with otherwise similar characteristics (Glaeser et al., 2003). While unobserved heterogeneity and sorting of individuals across groups may account for part of the differences in cheating behavior, social interactions within a group of students linked by different types of contextual ties are often necessary to explain the excess variation that is observed in the data (Manski, 1993, 2000).

To investigate cheating behavior and social externalities, we use a unique data set drawn from a national evaluation test – the 'National Survey of Students' Attainments', a test in mathematical and language literacy – which is compulsory for all schools and students attending different grades of primary and junior-high school in Italy. In particular, we exploit a specific feature of the administration of the test, which assigns an external inspector to a randomly chosen sample of classrooms. Social externalities in cheating behavior are identified by contrasting the variances of students' test scores in classrooms where the test was supervised by school teachers only (i.e. our control group) with the variances of students' test scores in classrooms where an external inspector was supervising the test (i.e. our treated group). We report evidence showing that the test scores are on average higher, more homogeneous and exhibit a lower variance in classrooms without external monitoring as compared to monitored classrooms. We interpret such evidence as an indication of cheating occurring during the test.[4] The identification strategy is based on the excess-variance approach (henceforth, E-V), which exploits the exclusion restrictions provided by the randomized experiment to separate the part of the variability due to individual- and group-level heterogeneity from the excess variability genuinely originating from social interactions (Graham, 2008).

This paper contributes to the existing literature on cheating behavior (among others, Dee and Jacob, 2012: on plagiarism; Jacob and Levitt, 2003; Dee et al., 2011: on teachers' manipulation; Carrell et al., 2008; Bertoni et al., 2013; Angrist et al., 2014 for students' and teachers' cheating).[5] In this context, our approach departs from existing studies in a number of ways. With respect to Carrell et al. (2008), we do not identify the effects of cheating on individual test scores using self-reported measures of cheating and the 'share of cheaters' in the reference group, but identify cheating behavior via (endogenous) social interactions. We also depart from Bertoni et al. (2013) and Angrist et al. (2014) who use similar data to our own and focus on primary school only (second and fifth grade). In particular, the paper by Bertoni et al. (2013) estimates the effects of external monitoring on classroom average test scores; while Angrist et al. (2014) investigate the effect of class-size

[1] Large-scale cheating has been uncovered over the last year at some of the U.S.'s most competitive schools, like *Stuyvesant High School* in Manhattan, the *Air Force Academy* and, most recently, *Harvard University* (The New York Times, 7 September 2012). An increasing trend in the number of cases of test maladministration and forms of students' and teachers' cheating has also been discovered in the U.K. national curriculum assessments (*Maladministration Report*, Standard & Testing Agency, 2013). A survey conducted as part of the Academic Integrity Assessment Project by the Center for Academic Integrity (Duke University) reported that 21% of undergraduates admitted to having cheated in exams at least once a year (McCabe, 2005). Another survey run in 2010 by the Josephson Institute of Ethics (*Report on Honesty and Integrity*, 2011) found that 59.3% of the U.S. students interviewed cheated at least once during a test, while more than 80% of them copied from others' homework at least once.

[2] Note that reporting the offenders, as contemplated in many schools' ethical codes, is required to halt the diffusion of cheating behaviors; nevertheless, it should be noted that small transgressions and dishonest behavior are very often overlooked or tolerated within many schools, either because students do not like to be directly involved in the accusation or because the schools themselves do not want to be associated with the judiciary procedures required to support the allegations of a student's dishonesty.

[3] If there are social interactions in which one person's actions influence his peers' incentives or information (and vice versa), then the presence of positive social interactions, or strategic complementarities, imply the existence of a social multiplier where the aggregate relationships will overstate individual elasticities (Glaeser et al., 2003).

[4] Students' cheating during the test is an interesting case study of social interactions in the classroom, since it is likely to capture the same pattern of friendships and cooperative behaviors that takes place during the school year. Students are more likely to interact with close friends, classmates they see outside school (i.e. participating to social activities together), as well as those sitting closer.

[5] Evidence on cheating behavior in academia is also presented in McCabe and Trevino (1993), Jordan (2001) and McCabe (2005).

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