Journal of Economic Psychology 45 (2014) 237–252

Contents lists available at ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

Overconfidence, omens and gender heterogeneity: Results from a field experiment

Maria De Paola [a,b,*], Francesca Gioia [a,c], Vincenzo Scoppa [a,b]

[a] Department of Economics, Statistics and Finance, University of Calabria, Via Ponte Bucci, 87036 Arcavacata di Rende (CS), Italy
[b] Institute for the Study of Labor (IZA), Bonn, Germany
[c] School of Economics, University of Edinburgh, 30 Buccleuch Place, Edinburgh EH8 9JT, UK

ARTICLE INFO

Article history:
Received 8 November 2013
Received in revised form 11 October 2014
Accepted 16 October 2014
Available online 1 November 2014

JEL classification:
D0
D83
D03

PsycINFO classification:
2340
2930

Keywords:
Expectations
Grade
Overconfidence
Gender differences
Emotions
Superstition

ABSTRACT

We investigate whether overconfidence is affected by superstitious beliefs and whether the effect is heterogeneous according to gender. With this aim, we run a field experiment involving about 700 Italian students. According to widespread superstitions, some numbers are considered lucky while others are thought of as unlucky. In our experiment, we exploited this by randomly assigning students to numbered seats in their written exam. At the end of the examination, we asked students the grade they expected to get. We find that students tend to be overconfident about their performance at the exam and that their overconfidence is positively affected by being assigned to a lucky number. Interestingly, males and females react differently: females' overconfidence tends to be negatively affected when assigned to unlucky numbers, while they are not affected by being assigned to lucky numbers; males are not affected by being assigned to unlucky numbers but are more overconfident when assigned to lucky numbers.

1. Introduction

Psychological studies, surveys and laboratory experiments show that overconfidence is a characteristic trait of human beings. They tend to overestimate their ability and to manifest unrealistically positive self-evaluations, to think that they have more control over events than can objectively be true (illusion of control) and to believe that their knowledge is more precise than it really is (miscalibration) (Glaser, Nöth, & Weber, 2004; DellaVigna, 2009).

Existing literature features two types of overconfidence: "absolute overconfidence" or "stand-alone overconfidence", a form of self-evaluation in absolute terms (Yates, Lee, Sieck, Choi, & Price, 2002) and "relative" or "referential" overconfidence, which requires comparison with others (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Glaser & Weber, 2007; Grieco & Hogarth, 2009). Examples of absolute overconfidence are the excessive expectations of self-control ability

* Corresponding author at: Department of Economics, Statistics and Finance, University of Calabria, Via Ponte Bucci, 87036 Arcavacata di Rende (CS), Italy.
E-mail addresses: m.depaola@unical.it (M. De Paola), fgioia@unical.it (F. Gioia), v.scoppa@unical.it (V. Scoppa).

http://dx.doi.org/10.1016/j.joep.2014.10.005
0167-4870/

found in the choice of health club contracts (DellaVigna & Malmendier, 2006), an incorrect prediction of the time needed to complete a task and the overestimation of the accuracy of one's own information (Buehler, Griffin, & Ross, 1994; Kent, Hirshleifer, & Subrahmanyam, 1998; Newby-Clark, Ross, Buehler, Koehler, & Griffin, 2000). As regards relative overconfidence, Svenson (1981) shows that subjects perceive their driving skills to be better than those of the average driver, while Camerer and Lovallo (1999) provide evidence of the overestimation of one's own ability to start a business in comparison with that of others.

Overconfidence is of interest because it can lead to suboptimal results. There is evidence of suboptimal financial decision-making due to excessive trading (Barber & Odean, 2001; Deaves, Lüders, & Luo, 2009), to under-diversification (Goetzmann & Kumar, 2008) and over-investment (Harvey, Ben-David, & Graham, 2007). Camerer and Lovallo (1999) explain the high rate of business failure in relation to overconfidence which leads to excess entry. Similarly, Malmendier and Tate (2005 and 2008) consider overconfidence to explain why investments are often dictated by cash flows. Cooper, Woo, and Dunkelberg (1988) and Koellinger, Minniti, and Schade (2007) also document entrepreneurs' excessive optimism.

A number of works documents the fact that overconfidence is negatively correlated with age and abilities (Barber & Odean, 2001; Bengtsson, Persson, & Willenhag, 2005; Niederle & Vesterlund, 2007; De Paola, Gioia, & Scoppa, 2013). In addition, the tendency to overestimate our own ability and to express extremely positive self-evaluation occurs especially when performing hard tasks,[1] while with easy tasks, when success is likely and when the individual making the judgment is skilled, underestimation is quite common (Lichtenstein, Fischhoff, & Phillips, 1982; Sniezek, Paese, & Switzer, 1990; Griffin & Tversky, 1992; Stankov & Crawford, 1997; Kirchler & Maciejovsky, 2002; Koriat, Sheffer, & Ma'ayan, 2002; Larrick, Burson, & Soll, 2007).

The type of task performed is also relevant to understand gender differences in overconfidence. For instance, in areas such as finance, men are more overconfident than women (Barber & Odean, 2001). Some recent works (Niederle & Vesterlund, 2007; Datta Gupta, Poulsen, & Villeval, 2013; Ors, Palomino, & Peyrache, 2013) show that gender differences in overconfidence are greatly responsible for women's tendency to shy away from competition, which, in turn, could explain female under representation in top positions.

However, little is known about the factors that lead individuals to different levels of confidence. Understanding the mechanisms leading to overconfidence might help people to learn how to avoid this potentially costly cognitive bias. In our work, we try to isolate one potential driver (superstition) of biased beliefs about one's own ability in order to study its causal impact on overconfidence and its possible heterogeneity due to gender. Our two research questions are: do good- and bad-luck-related superstitions, induced by exposure to lucky and unlucky numbers, affect an individual's level of confidence? Do men and women react differently to superstitious beliefs?

Superstitions may be defined as beliefs or behaviours that have no religious or scientific foundation, but originate from misleading interpretations of accidental circumstances which lead people to think that certain actions, objects or external events can bring good or bad luck, or be signs announcing positive or negative consequences (Campbell, 1996; Delacroix & Guillard, 2008).

However, while superstition was related to "true beliefs" in the Middle Age, modern superstition is often a "half-belief" (Campbell, 1996). Nowadays, people adopt superstitious behaviour without being completely convinced. Many people who intellectually reject a superstition, still allow it to influence their thoughts and actions and, when asked, superstitious people are unable to provide a rational explanation to why they behave that way.

Observing superstitions might lead to some advantages since it could help to regulate tension and create a feeling of control (Womack, 1992; Keinan, 2002; Schippers & Van Lange, 2006). This could explain the great diffusion of superstitious behaviour among athletes. In fact, research on superstition has shown that people are most likely to engage in superstitious behaviour when they experience the feelings of uncertainty and stress (see Malinowski, 1954; Keinan, 1994; Whitson & Galinsky, 2008) that characterise performance related situations, such as those faced by athletes and students (Sarason, 1984; Albas & Albas, 1989; Womack, 1992; Treasure, Monson, & Lox, 1996). On the other hand, superstition may itself induce stress and anxiety and this may have negative consequences. For example, some works report more injuries from transport accidents on Friday the Thirteenth (Scanlon, Luben, Scanlon, & Singleton, 1993; Näyhä; 2002), maybe because superstitious drivers, feeling unlucky on that day, experience stress and anxiety, and so drive less carefully.

We decided to focus on superstitious beliefs because they are quite common in almost every society and seem to affect both individuals' behaviour and welfare (Torgler, 2007).

In particular, we used numbers as an instrument to activate good and bad luck superstitions because there is extensive literature documenting individuals' number-related superstitious behaviour. The beliefs in "lucky" and "unlucky" numbers have been found to have effects on the prices of houses (Bourassa & Peng, 1999), on the prices of vehicle license plates in China (Woo & Kwok, 1994; Woo, Horowitz, Luk, & Lai, 2008; Ng, Chong, & Du, 2010) and on the timing of babies' birth year (Wong & Yung, 2005). O'Reilly and Stevenson (2000) show that patients in Northern Ireland prefer delaying the day of discharge from maternity units to avoid the bad luck of Saturdays. Lewis and Gallagher (2001) study the unwillingness of college students of taking a test on Friday the Thirteenth. Similarly, Kolb and Rodriguez (1987) investigate the effects of superstition on financial markets and find lower mean returns for Friday the Thirteenth.

[1] Previous research has shown that absolute overconfidence appears to be greatest for difficult tasks (Moore & Healy, 2008), whereas relative overconfidence appears to be greatest for easy tasks (Hoelzl & Rustichini, 2005; Moore & Healy, 2008).