



# Machiavelli as a poker mate – A naturalistic behavioural study on strategic deception



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## ABSTRACT

Machiavellianism has been considered in the literature as the symbol for manipulative strategies in social conduct. However, it has been rarely studied via behavioural experiments outside the laboratory, in more naturalistic settings. We report the first behavioural study ( $N = 490$ ) evaluating whether Machiavellian individuals, high Machs, deceive more than low Machs in online poker, where deception is ethically acceptable and strategically beneficial. Specifically, we evaluated Machiavellianism, bluffing patterns, and emotional sensitivity to getting “slow-played” (“stepping into a trap”). Bluffing was assessed by realistic poker tasks wherein participants made decisions to bluff or not, and sensitivity to slow-play by a self-report measure. We found that high Machs had higher average bluff sizes than low Machs (but not higher bluffing frequency) and were more distraught by getting slow-played. The Machiavellian sub-trait “desire for control” also positively predicted bluffing frequency. We show that online poker can be utilized to investigate the psychology of deception and Machiavellianism. The results also illustrate a conceptual link between unethical and ethical types of deception, as Machiavellianism is implicated in both.

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## 1. Introduction

Deception refers to acts that propagate beliefs of things that are not true, or not the whole truth. It is an integral part of human behaviour, having co-evolved with cooperation when our ancestors manipulated the beliefs of others to obtain mates and resources, and to avoid direct conflicts (Cosmides & Tooby, 2005).

Some forms of human deception are considered to be more ethically acceptable than others, such as benign daily white lies (a lie in order *not* to hurt another person) compared with malicious large-scale frauds. However, regardless of their scale or form, acts of deception are often viewed in a negative light. Also most scientific research on human deception has focused on its “darker” side. For example, research on individual variation in deceptive behaviour has emphasized the role of the so-called “dark triad” personality traits – namely, psychopathy, narcissism, and Machiavellianism (e.g. Jones & Paulhus, 2011). Of these, Machiavellianism is particularly salient in deceptive behaviour: Individuals with high Machiavellianistic tendencies (“high Machs”) engage in amoral and deceptive manipulation, tend to seek control over others and to gain status for themselves (Christie & Geis, 1970;

Dahling, Whitaker, & Levy, 2009). High Machs view human nature in an overly cynical manner, and to them, the end often justifies the means.

More specifically, high Machs, compared with low Machs, have been found to be less ethical (Hegarty & Sims, 1978), better liars (Geis & Moon, 1981), more likely to cheat when the likelihood of getting caught is low (Cooper & Peterson, 1980), and more likely to engage in fraudulent financial reporting (Murphy, 2012). However, recently Jonason, Lyons, Baughman, and Vernon (2014) found that high Machs reported telling more lies (of any type) and white lies than low Machs, indicating that high Machs use deception strategically – not only due to lack of moral constraints.

This view of high Machs as *strategic* manipulators is consistent with the study by Jones and Paulhus (2011) evaluating the associations between impulsivity and the dark triad traits: whereas psychopathy and narcissism were associated with increased impulsivity, Machiavellianism was not, which the authors argued allowed “Machiavellians to refrain from counterproductive behaviours despite their selfish intentions”. Along the same line, both psychopathy and Machiavellianism were found to be positively associated with cheating in university (e.g., plagiarism), but this association was weaker for Machiavellianism (Williams, Nathanson, & Paulhus, 2010). Ostensibly, lacking the impulsivity of psychopaths, high Machs more prudently attend to the possible negative consequences of cheating. According to this view, high Machs’ deceptive and sometimes amoral tendencies are primarily driven by strategic calculations.

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To better understand the psychology of deception and Machiavellianism, it is worthwhile to evaluate the conceptual similarities and differences between socially condemnable and acceptable forms of deception. Although high Machs are more deceptive and manipulative in real life than low Machs, it is not well understood whether this tendency transfers to contexts where deception is not only morally acceptable but also strategically beneficial. If high Machs deceive and manipulate mainly for strategic reasons, they should be more likely than low Machs to deceive also in such morally acceptable contexts.

One way to shed light on this issue is to study how Machiavellianism influences behaviour in *economic games*, which allow evaluating various aspects of strategic decision-making. Unfortunately, not many such studies have been reported. In *trust games*,<sup>2</sup> high Machs were more likely than low Machs to distrust their co-players (Burks, Carpenter, & Verhoogen, 2003) and less likely to reciprocate trust (Bereczkei, Deak, Papp, Perlaki, & Orsi, 2013; Gunnthorsdottir, McCabe, & Smith, 2002). Spitzer, Fischbacher, Herrnberger, Grön, and Fehr (2007) found that when there was no fear of punishment for unfair resource allocations, high Machs defected more than low Machs. Finally, in the one-shot *ultimatum game*, high Machs behaved more “rationally” than low Machs by accepting unfair offers more frequently,<sup>3</sup> but resisted exploitation in the iterated version of the game (Meyer, 1992).

Most economic games entail some ecological validity concerns, being oversimplified for “laboratory-convenience”. These games cannot fully model real-life behaviour. Previous studies have also not evaluated how Machiavellianism is linked to strategic deception in a naturalistic setting; it has been noted that tasks to induce deception in such settings are very challenging or even impossible to design (Book, Holden, Starzyk, Wasylkiw, & Edwards, 2006; Jonason et al., 2014).

*Poker* offers a platform for observing strategic deception in a naturalistic environment. Poker is played frequently by a hundred million people worldwide, most notably *online*. It is a game of incomplete information where some cards are known to the players only, but not to their opponents. No apparent ethical or social pressure prevents players from deceiving in poker; instead, deception is the norm in the game. Game-theoretically, deception is also *necessary* to increase winning chances (Chen & Ankenman, 2006). The most recognized form of deception in poker is *bluffing*, which refers to betting or raising (showing strength) with a weak hand (cf. glossary) to make the opponent fold (give up). Another form of poker deception is *slow-playing* (or *trap-playing*), which is roughly the opposite of bluffing: betting weakly or not at all with a very strong hand to “lure” the opponent into betting or raising with a weaker hand (luring someone into a trap). Both bluffing and slow-playing are strategies to increase the profitability of playing with weak (bluffing) or strong (slow-playing) poker hands by inducing a false belief in one's opponent about what cards the player is holding.

Moreover, unlike most other economic games, poker decision-making has direct monetary implications for the players, which can be mathematically calculated (e.g. Palomäki, Laakasuo, & Salmela, 2013). However, no previous study evaluated how individual differences in deceptive personality traits relate to these effects. The evidence linking Machiavellianism to strategic uses of deception (Jonason et al., 2014; Jones & Paulhus, 2011) suggests that individual differences in Machiavellianism might be reflected in different poker playing styles. If high Machs are strategic deceivers, they should be more likely than low Machs to bluff in online poker. We thus hypothesized that:

**H1a.** : High Machs bluff more frequently..

**H1b.** : Bluff in higher amounts than low Machs in online poker.

Similarly, Machiavellianism might be implicated also in slow-playing. In addition to being strategic deceivers, high Machs are sometimes referred to as true *homines economici* – rational and “cold-blooded” gamblers whose decisions are mostly unaffected by emotions (Gunnthorsdottir et al., 2002). Thus, high Machs, compared with low Machs, might feel less distraught by losing due to being “slow-played” against, because they are better able to control their emotions. We also hypothesized that:

**H2.** : High Machs are less emotionally sensitive than low Machs to situations in which they are the victims of a slow-play.

## 2. Method

### 2.1. Participants

An online study including both behavioural and questionnaire-based measures was created with Qualtrics ([www.qualtrics.com](http://www.qualtrics.com)) in English. Five hundred and fifty-eight participants were recruited from various international online poker web-forums. Based on a priori criteria, 56 (10%) participants were screened out due to insufficient skills in written English (skills not reported as “very good or better”). Twelve participants (2.2%) were also omitted due to extreme values in one dependent variable.<sup>4</sup> The final sample size was 490 (424 [86.5%] males, 35 [7.1%] females,  $M_{age} = 30.00$ ;  $SD_{age} = 8.66$ , range: 16–67). Gender imbalance is typical in studies sampling poker playing populations (Palomäki et al., 2013). Of the participants, 108 (22.9%) had no college education, 127 (27%) had some college education but no degree, 136 (28.9%) held a bachelor's degree, and 100 (21.3%) held a master's degree or higher. On average, our participants reported an annual income between US\$30,000 and \$40,000 (ranging from below \$20,000 [35.1%] to above \$80,000 [11.2%]). Thirty-one participants (6.3%) had missing data on demographics. These participants were omitted from analyses where demographic data was controlled for. Participants were offered the possibility of taking part in a draw of five separate \$50 Amazon.com gift coupons. This study was approved by the Newcastle University ethics committee.

### 2.2. Procedure

Participants first gave informed consent. Thereafter they filled in the Machiavellian Personality Scale, and three exploratory measures (including measures of poker experience, and masculine traits such as competitiveness and assertiveness; consult the Supplementary material section for details), followed by behavioural bluffing tasks, a scale measuring sensitivity to slow-play, and demographics. Participants were to make *bet/do not bet* (i.e., bluff/do not bluff) decisions in four individual simulated bluffing tasks, in which they were “sitting” at an online poker table with four opponents represented by avatars and the names “Opponent 1–4” (see dependent variables).<sup>5</sup> The bluffing tasks were presented in random order.

### 2.3. Materials

#### 2.3.1. Machiavellian Personality Scale (MPS)

This 16-item scale conceptualizes Machiavellianism as individual propensity to distrust others, engage in amoral manipulation, and seek

<sup>2</sup> In two-player trust games, one player sends to the other some amount of resources, which are then multiplied by some factor and distributed at the receiver's discretion between the two players.

<sup>3</sup> In the one-shot ultimatum game, two players divide a sum of money between them. The first player proposes a division (e.g., 60–40), which the second player either accepts or rejects. If the proposal is rejected, neither player receives anything. If it is accepted, the money is split accordingly. Rejecting *any* offer can be viewed as “irrational”, if assumed that receiving *some* resources is better than receiving *none*.

<sup>4</sup> Including these participants in the analyses *strengthened* the results.

<sup>5</sup> The study included also an experimental manipulation, where participants were randomly assigned across three conditions. The bluffing tasks were taken at a table with 1) gender mixed (two female and two male), 2) all male, or 3) all female avatar opponents. This manipulation was aimed at evaluating hypotheses unrelated to the current aims, and these results will be reported elsewhere. Including this manipulation into statistical models as a covariate/factor had no effect on the results presented in this paper.

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