Evil Geniuses Bullshit You, But You Cannot Bullshit Them: Interactions between Machiavellianism and Intelligence in Bullshit Production and Detection

Christian Blötner

FernUniversität in Hagen; christian.bloetner@fernuni-hagen.de

Abstract: Persons high in the manipulative, misanthropic trait Machiavellianism have been shown to make use of various forms of deception to attain their goals. A recent study has furthermore shown that different facets of Machiavellianism account for the production and detection of deception. Intelligence is another substantial predictor of successful deception production and detection. This research examined the interactions between different facets of Machiavellianism and verbal reasoning to predict both the production and detection of empty and vague, but effective pseudo-information that is supposed to help achieve desired states or prevent undesired ones (co-called *bullshit*). In a sample of 525 participants, and consistent with the hypotheses, individuals with high scores in the goal-oriented (harm-avoiding) facet of Machiavellianism produced bullshit more frequently to achieve certain goals (to circumvent any disadvantageous situations) if they also possessed high scores in verbal reasoning. In addition, verbal reasoning helped individuals high in the distrustful facet of Machiavellianism discriminate bullshit from non-bullshit. Thus, Machiavellianism combined with verbal skills helps produce and recognize deception.

Keywords: Dark Triad; deception; cognitive ability; pseudo-information; bullshit sensitivity

1. Introduction

We are living in a time of change and uncertainty. Certain individuals likely try to capitalize on interpersonal and societal ambiguities by attempting to acquire certain advantages at the expense of others or to escape from punishing situations they maneuvered themselves into. At the same time, particular individuals appear to be less affected by the more or less common misinformation. The present research provided further insights into who is likely to be both motivated *and* skilled to strategically produce misinformation that helps attain antisocial goals and escape inconvenient situations as well as to recognize misinformation as such. This study examines individual differences in the motivation and the ability to deceive others through so-called *bullshit* and to avoid being deceived by externally provided bullshit.

1.1. Machiavellianism

Inspired by the treatises on political reasoning and moral issues published by Niccolò Machiavelli [1], Christie and Geis [2] derived the personality trait *Machiavellianism*. It is characterized by an attitude according to which the end justifies the means (i.e., any interpersonal strategy should be used to achieve desired ends) as well as a pessimistic view of human nature. The latter manifests itself in the belief that humankind is driven by egotistic motives and by projecting one's own deceptive intentions onto other people [2,3]. Since Machiavellianism lacked a theoretically and empirically sound theoretical foundation, Blötner and Bergold [4] derived a motivationally oriented conceptualization of Machiavellianism capitalizing on the strategic acquisition of resources of any kind at any cost (*Machiavellian approach*) as well as distrustful, skeptical prevention of any kind of harm at any cost (*Machiavellian avoidance*). According to their conceptualization, approach and avoidance facets are theoretically and empirically connected by low agreeableness, low honesty, and

high cynicism, which all serve the acquisition of desired states and defense against undesired ones. Furthermore, these characteristics are viewed as prototypically Machiavellian characteristics [2–4]. Following the selfish and ruthless nature of Machiavellianism, recent research found Machiavellianism to be positively related to the engagement in a host of deceptive behaviors [3–5], but little is known about whether individuals high in Machiavellianism themselves can be cheated, which can be attributed to the fact that extant studies rarely distinguished between facets of Machiavellianism [5,6]. An exemplary study employed Blötner and Bergold's [4] conceptualization of approach and avoidance motives within Machiavellianism to model relations with the production of and gullibility to bullshit information [6,7]. The present research aims to extend the knowledge gained from this study by examining verbal reasoning as a moderator of the relations between Machiavellianism and dealing with bullshit.

1.2. Bullshit Sensitivity and Bullshitting

Bullshit refers to empty, misleading statements with indifference for truth, clarity, and/or meaning, and is often produced to make favorable impressions, to avert potential disadvantages, or to deceive in other ways [6,8]. To illustrate everyday situations in which bullshit occurs, Turpin et al. [9] referred to being gifted an ugly sweater. Being asked whether one likes the sweater, a person could escape the unpleasant situation evoked by being honest by expressing gratitude and stating how kind and thoughtful the present was. In terms of own bullshit production (*bullshitting*), this exemplary situation corresponds to *evasive bullshitting*, that is, the expression of bullshit to prevent oneself and/or others from any sort of harm [10]. On the other hand, bullshit produced to appear more competent or to achieve certain desirable goals is called *persuasive bullshitting* [10]. Consistent with the resource-acquiring and harm-avoiding conceptualizations of the facets of Machiavellianism and bullshitting, Machiavellian approach was associated with higher engagement in persuasive bullshitting and Machiavellian avoidance with higher engagement in evasive bullshitting [4,7]. At the same time, given the motivation to avert experiencing any sort of disadvantages [4], Machiavellian avoidance was linked to higher *bullshit sensitivity*, that is, the ability to recognize bullshit and non-bullshit as such and to ascribe more meaning to non-bullshit statements than to bullshit statements [6,7].

1.3. Moderation by Verbal Reasoning Skills

It is reasonable to assume that Machiavellianism embodies the *motivation* to cheat, but not necessarily the *ability* to do well in this regard [3–5]. Similarly, Machiavellian avoidance reflects the motivation to avert harm, but not a respective ability [4]. Unlike bullshit recognition [6,9], Machiavellianism is unrelated to cognitive abilities in general as well as to different aspects of cognitive abilities [11]. It stands to reason that individuals scoring high in cognitive abilities are equipped with better reflective skills than those scoring low in cognitive abilities [6], accounting for higher bullshit sensitivity [6,9,12]. Similarly, intelligence has an adaptive function for individuals' daily life in the sense of problem-solving in the broadest sense, with the ability to produce better bullshit increasing with higher cognitive abilities [9]. Accordingly, higher cognitive abilities can be viewed as a resource to withstand the cognitive demands related to producing deceptive communication [13]. Given the linguistic nature of bullshit, I argue that verbal reasoning (as a meaningful facet of cognitive abilities) in particular helps produce and withstand bullshit, as those with better verbal reasoning skills are better at scrutinizing statements and detecting nonsense and/or inconsistencies in phrases [14]. Verbal reasoning skills should also foster the production of more eloquent bullshit, which also requires less effort by the producer (both compared to individuals with lower verbal reasoning skills) [13]. It is assumed that the deceptive effect of bullshit is caused by activating heuristic rather than intellectual processing routes, making cognitive reflection by recipients less likely [15].

1.4. Current Research and Hypotheses

The stated considerations as well as extant evidence point to independent contributions of Machiavellianism and verbal reasoning skills in modeling bullshit production and reception. Thus, I hypothesized that verbal reasoning skills moderate the relations between facets of Machiavellianism and bullshit production and recognition alike. More precisely, I expected that the relation between Machiavellian approach and persuasive bullshitting frequency is stronger for individuals with high (compared to average and low) verbal reasoning skills (Hypothesis 1). Likewise, I expected that the relation between Machiavellian avoidance and evasive bullshitting frequency is stronger for individuals with high (as compared to average or low) verbal reasoning skills (Hypothesis 2). Last, I hypothesized that the link between Machiavellian avoidance and bullshit sensitivity is stronger for individuals with high (as compared to average or low) verbal reasoning skills (Hypothesis 3). Given that Machiavellian approach is both theoretically and empirically unrelated to falling victim to deception and characteristics making gullibility more or less likely [4,7], I explored the moderating effect of verbal reasoning in the relation between Machiavellian approach and bullshit sensitivity.

2. Materials and Methods

2.1. Sample

The dataset used for this study was adopted from Blötner and Bergold's [7] study on the main effects of Machiavellianism in bullshit production and reception. The interaction effects proposed in the current study have not yet been examined. The sample comprises 525 participants (M_{age} = 24.4, SD_{age} = 6.6; 380 self-identifying as female, 143 self-identifying as male, and two self-identifying as diverse). The data was predominantly collected in university groups on social media.

2.2. Measures

In the following, I present the measures used in the order in which the participants responded to them. I only refer to those measures crucial to the present study. Scales not yet available in German were translated by at least two independent persons who were blind to the goals and the nature of the measures (see [7] for details).

2.2.1. Verbal Reasoning

Verbal reasoning was measured with the same-named four-item subscale from the *International Cognitive Ability Resource* [16]. Respondents are provided with hypothetical situations and need to make certain inferences.

2.2.2. Machiavellianism

The original study used the *Machiavellian Approach and Avoidance Questionnaire* [4]. It measures the focal facets of Machiavellianism with four items each, 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*.

2.2.3. Bullshit Detection

The participants were provided with the *Bullshit Receptivity Scale* [6]. It contains ten items each reflecting pseudo-profound bullshit items and truly profound statements. Respondents were asked to which extent they believed each statement was profound, 1 = *disagree strongly*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *slightly agree*, 5 = *agree strongly*.

2.2.4. Bullshitting Frequency

The frequency to engage in persuasive and evasive bullshitting was assessed with the *Bullshitting Frequency Scale* [10]. It assessed the frequency of employing persuasive (evasive)

bullshitting with eight (four) items, 1 = *never*, 2 = *rarely*, 3 = *occasionally/sometimes*, 4 = *frequently*, 5 = *a lot/all the time*.

2.3. Analytical Strategy

The hypotheses were evaluated through structural equation modeling with the *R* packages *lavaan* (version 0.6–15; [17]) and *semTools* (version 0.5–6; [18]). To reduce multicollinearity between the substantial factors and the interaction term, I applied residual centering to the product term [19]. To conclude higher bullshit sensitivity, researchers have hitherto computed difference scores between the mean endorsement of bullshit statements and the mean endorsement of non-bullshit statements [6]. However, this practice is not justified both from conceptual and statistical points of view. In concrete terms, bullshit and non-bullshit statements are clearly distinguishable entities. Since there is no latent continuum on which bullshit and non-bullshit are the two extremes, calculating difference scores is pointless (by analogy, consider subtracting 5 apples from 9 oranges). It is thus advised to conceptualize bullshit sensitivity as a correlation difference [20]. That is, I compared the path coefficients of the interaction term of intelligence onto the endorsement of bullshit and non-bullshit simultaneously and tested whether the moderation effect of verbal reasoning skills on the endorsement of non-bullshit was stronger than the moderation effect of verbal reasoning skills on the endorsement of bullshit (see Figure 1). Since the *p*-value of the χ^2-test is oversensitive to negligible deviations, I based model evaluations on descriptive fit indices and concluded good fit of the structural equation models if the *Comparative Fit Index* (CFI) exceeded .95, if the *Root Mean Square Error of Approximation* (RMSEA) fell short of .06, and if the *Square Root Mean Residual* (SRMR) fell short of .08. [21]. The Open Science Framework Directory of this study provides the data and the analysis script that reproduces the current results: https://osf.io/m6zbc/.
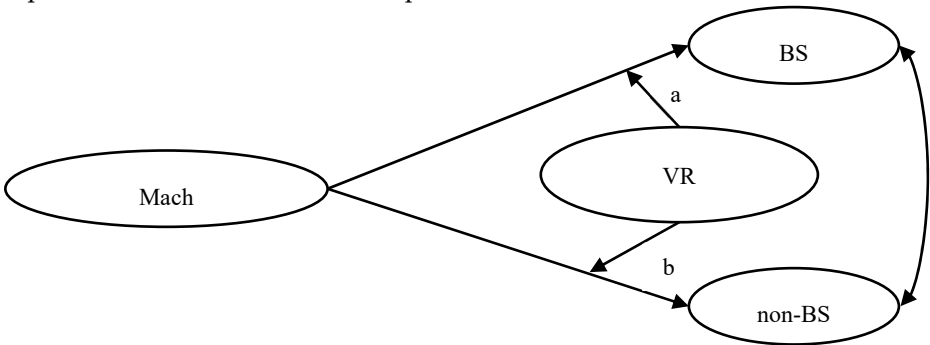
Figure 1. Demonstration of the principle of testing of bullshit sensitivity as a correlation difference. Mach = Machiavellianism. VR = Verbal reasoning. BS = Endorsement of bullshit statements. non-BS = Endorsement of non-bullshit statements. Manifest indicators of the latent factors are omitted.

3. Results

3.1. Bullshitting Frequency

The structural equation models for testing the interaction effects of verbal reasoning in the relations between Machiavellian approach (avoidance) and persuasive (evasive) bullshitting (Hypotheses 1 and 2) revealed a good fit, $\chi^2(164) = 205.41$, *p* = .02, CFI = .98, RMSEA = .02, SRMR = .04, and $\chi^2(98) = 140.1$, *p* = .003, CFI = .95, RMSEA = .03, SRMR = .04, respectively.

3.1.1. Machiavellian approach and persuasive bullshitting

Verbal reasoning moderated the relation between Machiavellian approach and persuasive bullshitting frequency, β = .23, SE = 0.07, *z* = 3.16, *p* = .002. A total of 27.3% of the variance of persuasive bullshitting frequency could be explained by the model. Consistent with Hypothesis 1, Figure 2 illustrates graphically that those scoring high in Machiavellian approach engage in persuasive bullshitting more frequently if they further possess high rather than average or low levels of verbal reasoning.
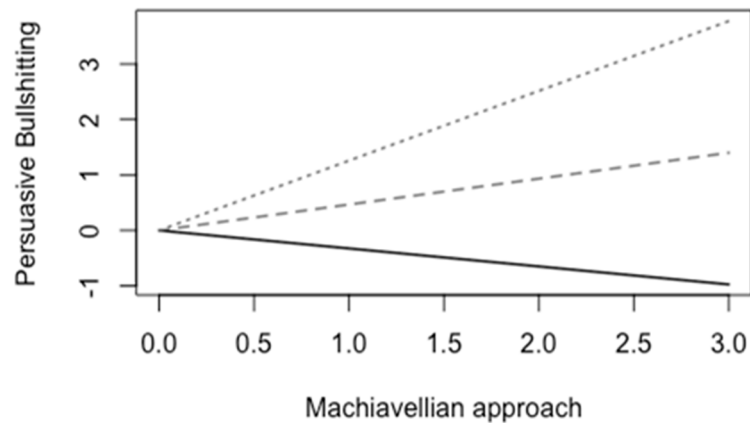
Figure 2. Relation between Machiavellian approach and persuasive bullshitting, moderated by verbal reasoning. All variables were standardized. Solid, dashed, and dotted lines indicate the trajectories for individuals scoring one standard deviation below average, at average level, and one standard deviation above average in verbal reasoning.

3.1.2. Machiavellian avoidance and evasive bullshitting

Verbal reasoning was a marginally significant moderator of the relation between Machiavellian avoidance and evasive bullshitting frequency, $\beta = .13$, SE $= 0.08$, $z = 1.70$, $p = .09$. A total of 9.3% of the variance of evasive bullshitting frequency could be explained by the model. Consistent with Hypothesis 2, Figure 3 illustrates graphically that those scoring high in Machiavellian avoidance engage in evasive bullshitting more frequently if they further possess high rather than average or low levels of verbal reasoning.
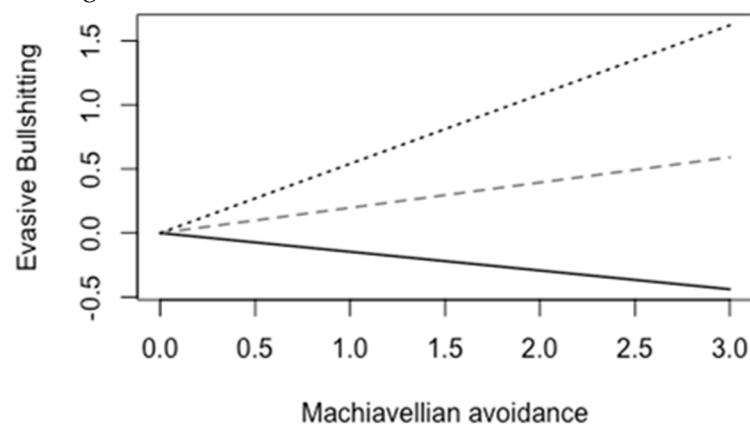
Figure 3. Relation between Machiavellian avoidance and evasive bullshitting, moderated by verbal reasoning. All variables were standardized. Solid, dashed, and dotted lines indicate the trajectories for individuals scoring one standard deviation below average, at average level, and one standard deviation above average in verbal reasoning.

3.2. Bullshit Sensitivity

The structural equation models for testing the interaction effects of verbal reasoning in the relation between Machiavellian avoidance and bullshit sensitivity (Hypothesis 3) revealed good fit in terms of the RMSEA and the SRMR but less than acceptable fit in terms of the CFI, $\chi^2(454) = 819.38$, $p < .001$, CFI $= .85$, RMSEA $= .04$, SRMR $= .06$. The same items are used, however, to establish the substantial factors and the interaction term (with the interaction term containing the product terms of the items) but residual correlations among items are prohibited. Thus, the allegedly poor model fit in terms of the CFI is artifactual. Individuals scoring high on Machiavellian avoidance endorsed non-bullshit more strongly if they possessed high rather than low verbal reasoning ($\beta_{nonBS} = .25$, SE $= 0.08$, $z = 3.15$, $p = .002$). However, I could not detect a respective moderation effect in the endorsement of

bullshit statements (β_{BS} = -.05, SE = 0.07, z = -0.82, p = .41), but the moderation effect of verbal intelligence in the endorsement of truly profound statements was stronger than was that in the endorsement of bullshit statements, β_{diff} = .31, SE = 0.10, z = 3.21, p = .001 (see also Figure 4). A total of 16.8% and 8.7% of the variances of the endorsements of truly profound and bullshit statements, respectively, could be explained by the model.
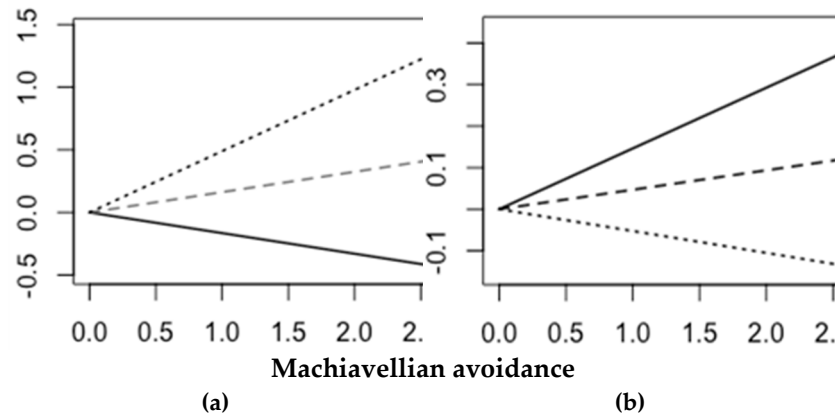
Figure 4. Relations of Machiavellian avoidance with the endorsements of non-bullshit statements (a) and bullshit statements (b), moderated by verbal reasoning. All variables were standardized. Solid, dashed, and dotted lines indicate the trajectories for individuals scoring one standard deviation below average, at average level, and one standard deviation above average in verbal reasoning.

The structural equation model to explore the moderating effect of verbal reasoning in the relation between Machiavellian approach and bullshit sensitivity yielded good fit in terms of RMSEA and SRMR, but less than acceptable fit in terms of the CFI, χ^2(454) = 803.37, p < .001, CFI = .85, RMSEA = .04, SRMR = .05. Verbal reasoning strengthened the relations of Machiavellian approach with the endorsements of both non-bullshit statements (β_{nonBS} = .19, SE = 0.08, z = 2.23, p = .03) and bullshit-statements (β_{BS} = .15, SE = 0.08, z = 7.79, p = .07), but the difference was not significant, β_{diff} = .04, SE = 0.10, z = 0.40, p = .69 (see Figure 5). A total of 8.9% and 10.8% of the variances of the endorsements if truly profound and bullshit statements, respectively, could be explained by the model.

Figure 5. Relations of Machiavellian approach with the endorsements of non-bullshit statements (a) and bullshit statements (b), moderated by verbal reasoning. All variables were standardized. Solid, dashed, and dotted lines indicate the trajectories for individuals scoring one standard deviation below average, at average level, and one standard deviation above average in verbal reasoning.

4. Discussion

4.1. Summary of the Present Study

Some scholars believed that intelligence was an inherent feature of individuals high in Machiavellianism, but this *evil genius hypothesis* had to be rejected [22]. In contrast to work treating intelligence as an integral part of Machiavellianism, the present study conceptualized the *evil genius* as a person scoring high in both Machiavellianism and verbal reasoning skills, that is, the assumption was made that one's cognitive abilities tell little about one's Machiavellianism and vice versa. This being said, Machiavellianism does not inevitably lead to success [23]. The constellation of high Machiavellianism and high verbal skills was sought to equip people with the motivation and the ability, respectively, to produce bullshit more frequently (Hypotheses 1 and 2) and to perform better at discerning bullshit from non-bullshit (Hypothesis 3). The results largely supported the hypotheses. Thus, the findings extend and differentiate the evidence gained from recent studies that emphasized the deceptive effects of Machiavellianism [2,5,7]. For instance, Palomäki et al. [24] found Machiavellianism to be related to bluffing in poker games and Gunnthorsdottir et al. [25] found Machiavellianism to be related to defecting in bargaining situations. To the best of my knowledge, the only study examining the interaction between Machiavellianism and intelligence was presented by Touhey [26]. He found that high Machiavellianism paired with high intelligence was associated with higher social mobility, that is, acquisition of status and other socially desired advantages. This is consistent with the findings of the present study as persuasive bullshitting is intended to warrant status and a positive reputation [10]. Likewise, Machiavellianism is strongly related to impression management techniques [27].

Given the facilitative effects of bullshitting in terms of making favorable or desired impressions and that Machiavellianism is related to the use of various strategies to acquire advantages [7,10,15], bullshitting turned out to be *one* strategy used by individuals high in Machiavellianism, especially those highly skilled when it comes to verbal reasoning. Furthermore, the present study showed that verbal reasoning helps those high in Machiavellian avoidance in particular to recognize non-bullshit as such, but verbal reasoning did not account for interindividual differences in the relation between Machiavellian avoidance and the endorsement of bullshit. This being said, I suspect certain methodological effects in terms of measurement and sampling.

4.2. Limitations and Future Directions

First, the ratios of variance explained by the models were comparatively small. One obvious reason for this might be that verbal reasoning was measured with only four items [16] and that the majority of the participants of the study from which I adopted the data were university students. Although structural equation modeling corrects for unreliability of the measure, both aspects accounted for variance restrictions in the observed intelligence distribution and thus, diminished relations between verbal reasoning and the intended criteria. Note that the results would have been similar if — consistent with earlier research [e.g., 6] — bullshit sensitivity would have been quantified as a difference score between the endorsements of bullshit and non-bullshit statements. Thus, it cannot be attributed to the novel approach to quantifying bullshit sensitivity applied here that the findings only partly support my initial hypothesis. The advantage of the present approach is that differentiated conclusions can be made about bullshit and non-bullshit statements, which would be blurred if endorsements of both kinds of phrases were subtracted within one pointless pseudo-difference index (see above; see also [20]). To address the two outlined limitations, future research should utilize more extensive scales to measure verbal reasoning (i.e., more observable variability) and recruit participants from a wider range of populations that differ more strongly in terms of verbal skills.

Second, it is questionable whether the participants expected being confronted with bullshit statements as scientific surveys might be perceived as having serious intentions [7]: It is unclear whether the same bullshit expressed either in research settings or by a potentially dubious person would be evaluated equally by recipients [see also 6]. Thus, characteristics of the situation or the

relationship between the producer and the receiver of the bullshit could not be considered in this study. Likewise, deceptive nonverbal or paraverbal cues usually indicating fraud in everyday situations have not been evident for the participants of the online survey [28]. Thus, future studies should make efforts to increase ecological validity.

Third, although verbal reasoning appears to be an obvious and strong determinant of linguistic deceptive behaviors such as bullshit production and reception, alternative moderators should be tested that focus more strongly on interpersonal functioning, such as *social* or *emotional intelligence*. That is, those motivated to manipulate others and protect themselves from harm (i.e., highly Machiavellian individuals) who are *also* skilled in dealing with others' cognitions and emotions (i.e., highly socially or emotionally intelligent people) might also qualify as the *evil geniuses* proposed in the present study [see also 22].

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of TU Dortmund University (protocol code GEKTUDO_2021-09, July 21st, 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data used to generate the present results can be obtained from https://osf.io/m6zbc/.

Conflicts of Interest: The author declares no conflict of interest.

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