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# Is it enough to be willing to win or do you have to be smart? The relationship between competitive worldviews, cognitive abilities, and applicant faking in personality tests

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## Abstract

Recent research has highlighted competitive worldviews as a key predictor of faking—the intentional distortion of answers by candidates in the selection context. According to theoretical assumptions, applicants' abilities, and especially their cognitive abilities, should influence whether faking motivation, triggered by competitive worldviews, can be turned into successful faking behavior. Therefore, we examined the influence of competitive worldviews on faking in personality tests and investigated a possible moderation of this relationship by cognitive abilities in three independent high school and university student samples ( $N_1 = 133$ ,  $N_2 = 137$ ,  $N_3 = 268$ ). Our data showed neither an influence of the two variables nor of their interaction on faking behavior. We discuss possible reasons for these findings and give suggestions for further research.

## KEYWORDS

cognitive abilities, competitive worldviews, faking, personality test, personnel selection, self-presentation

## 1 | INTRODUCTION

In the context of personnel selection, many companies are concerned that applicants distort their answers in self-assessment tools in order to increase their chances of getting hired (Christiansen, Rozek, & Burns, 2010; Hogan, Hogan, & Roberts, 1996). This behavior—known as faking—is quite common in personality tests (e.g., Griffith, Chmielowski, & Yoshita, 2007; Tett, Freund, Christiansen, Fox, & Coaster, 2012) and job interviews (e.g., Levashina & Campion, 2007; Weiss & Feldman, 2006). To describe faking, other terms have been also used (response distortion, social desirability, impression management, and self-presentation), with faking likely to be the most prevalent term. Despite terminological differences, most people in

the field will agree that faking should be understood as a continuum and that there are individual differences between applicants in terms of actual faking behavior (e.g., König, Hafsteinsson, Jansen, & Stadelmann, 2011; Raymark & Tafero, 2009): Some applicants engage in faking more than others, and these differences can lead to changes in the rank order of applicants. According to some authors, faking can therefore, negatively affect selection decisions (e.g., Donovan, Dwight, & Schneider, 2014; Peterson, Griffith, Isaacson, O'Connell, & Mangos, 2011), although this position is certainly not shared by everyone in the field (e.g., Hogan et al., 1996; König, Steiner Thommen, Steiner Thommen, Wittwer, & Kleinmann, 2017).

Due to the potentially problematic consequences of faking, research has repeatedly focused on this phenomenon, and the

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corresponding predictors, over several decades. One of the most recent models stemming from this research field is the *dynamic model of applicant faking* (Roulin, Krings, & Binggeli, 2016), which highlights the effects of candidates' perceptions and attitudes toward competition on their faking behavior. In addition to the predictors of faking already incorporated in previous theories, one of the central assumptions is that applicants' competitive worldviews influence their motivation to display an improved picture of themselves. In line with this idea, first empirical studies have shown substantial correlations between competitive worldviews and faking intentions, as well as resulting faking behavior in the context of job interviews (Bourdage, Roulin, & Tarraf, 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016; Schilling, Roulin, Obschonka, & König, 2020).

However, Roulin et al. (2016) line of argument is not limited to the interview context and should also be applicable to other selection tools. It is therefore important to test the generalizability of the model and the stability of the existing findings for other personnel selection procedures, such as standardized self-assessment tools. Personality tests are particularly suitable for such an evaluation, as they have been a focus of faking research for a long time (e.g., Bass, 1957). Moreover, meta-analytic research has indicated some very well-established findings on faking in personality tests (e.g., Birkeland, Manson, Kisamore, Brannick, & Smith, 2006; Viswesvaran & Ones, 1999).

In addition, the dynamic model of applicant faking specifies an interaction between the motivational component of faking—associated with competitive worldviews—and the capacity required for successful faking, which has not been tested yet. In line with other faking theories (e.g., McFarland & Ryan, 2006; Snell, Sydell, & Lueke, 1999), Roulin et al. (2016) assumed that motivation alone is not sufficient for successful faking. They argued that only if applicants also have the abilities needed to distort their answers in the desired direction can motivation turn into actual faking.

Accordingly, the present study aimed to examine the dynamic model of faking proposed by Roulin et al. (2016) by testing central hypotheses of this model in the context of faking of personality tests. This study therefore extends previous research by investigating the effect of competitive worldviews on faking in the context of personality tests thereby also addressing the question of the generalizability of previous research findings from job interviews. Using a within-subjects faking design (for an overview of different operationalizations of faking cf., Burns & Christiansen, 2011), we analyzed the corresponding relationships in three independent samples, using three different cognitive ability tests and two different operationalizations of the competitive worldviews construct.

## 2 | THEORETICAL BACKGROUND

### 2.1 | Competitive worldviews as a predictor of faking motivation and behavior

Originally conceptualized in the field of political psychology (Duckitt, 2001), competitive worldviews describe people's stable

beliefs that the world is a competitive jungle, in which everyone is in a constant race for scarce resources (Duckitt, Wagner, du Plessis, & Birum, 2002). To succeed in such an environment, people with strong competitive worldviews are more prone to act ruthlessly at times and to do whatever it takes to get ahead. In this respect, competitive worldviews should be most relevant for behavior in situations characterized by competition for resources. With their dynamic model of applicant faking Roulin et al. (2016) were the first to introduce competitive worldviews in faking research. They argued that competition with others for a resource—in this specific case for a job—is particularly salient in selection situations. Their model suggests that people with strong competitive worldviews are more aware of the competition in the selection process, assume that the other candidates are doing everything possible to be selected, and are therefore, more motivated to do whatever it takes to get the job, including faking in interviews or standardized self-assessment tools.

In line with this argumentation, recent empirical studies showed a substantial relationship between applicants' competitive worldviews and faking: Applicants with stronger competitive worldviews showed a higher motivation and intention to fake in a future job interview (Roulin & Krings, 2016:  $r = .50$ ) and also more self-reported faking behavior in past job interviews (Bourdage et al., 2018:  $r = .17-.20$ ; Roulin & Bourdage, 2017:  $r = .22-.45$ ; Roulin & Krings, 2016:  $r = .46$ ). Following these empirical results, we expect similar effects for the domain of personality tests, that is, a positive relationship between competitive worldviews and faking. Persons with stronger competitive worldviews should show more faking in personality tests ( $H_1$ ).

### 2.2 | The effect of cognitive abilities on (successful) faking behavior

Roulin et al. (2016) also assumed that successful faking requires not only the motivation to present oneself in an overly favorable way, but also the capacity to behave and answer accordingly. Applicants need to analyze the characteristics that are particularly important to a hiring organization—a task for which an applicant's *ability to identify the (selection) criteria* (ATIC; König, Melchers, Kleinmann, Richter, & Klehe, 2007) is a key factor. Following the argumentation behind ATIC, explicit and implicit cues about the requirements of a job can be interpreted differently well by applicants. In general, the correct interpretation of such cues should be easier for applicants if they possess more knowledge about the corresponding job. Research on ATIC has shown a direct effect on faking in various selection contexts (Klehe et al., 2012; König et al., 2007), but has also identified applicants' cognitive abilities as a direct antecedent of this ability (Kleinmann et al., 2011). Indeed, applicants must anticipate the answers and behavior that an organization expects from qualified applicants and subsequently be able to demonstrate such a behavior. According to Roulin et al. (2016), interpersonal skills play an important role for this task. Applicants with more pronounced interpersonal skills should be better at interpreting situational cues in a selection situation and apply appropriate faking strategies

based on these cues. Moreover, meta-analytic findings indicated that interpersonal skills are also substantially related to cognitive abilities (Van Rooy & Viswesvaran, 2004), and many authors do not consider them to be independent from cognitive abilities even on a theoretical level (Mayer, Caruso, & Salovey, 1999).

Looking at faking in personality tests in particular, the analytical aspect is probably the most important part (Marcus, 2009), because responses to items do not have to be translated into situation-specific and complex interactional behavior, as it would be the case in job interviews (Levashina & Campion, 2006). The main challenge for an applicant filling out personality items is to determine whether a particular response captures a characteristic that a company would, to some extent, like to see in an applicant for that job. This primarily analytical task should be easier for applicants with higher cognitive abilities (Marcus, 2009). Previous empirical results testing this assumption have been inconclusive: While a substantial proportion of studies found a corresponding effect (e.g., Nguyen, Biderman, & McDaniel, 2005; Pauls & Crost, 2005; Underhill, Bearden, & Chen, 2008), others did not (Furnham, Taylor, & Chamorro-Premuzic, 2008; Levashina, Morgeson, & Campion, 2009; Mudgett, 2000). Nevertheless, first meta-analytic results (Schilling, Becker, Grabenhorst, & König, 2016) indicate more faking behavior among more intelligent individuals, especially in laboratory studies.

However, the dynamic model of applicant faking (Roulin et al., 2016) expects that the abilities listed above only come into play when applicants are motivated to fake. This suggests that the ability aspect of faking moderates the relationship between an applicant's faking motivation and the actual faking behavior, an assumption that is also found in many previous faking theories (e.g., Ellingson & McFarland, 2011; Goffin & Boyd, 2009; McFarland & Ryan, 2006). Therefore, considering competitive worldviews as a proxy for applicants' motivation to distort responses to their benefit, and cognitive abilities as a proxy for the ability to translate this motivation into successful faking, leads us to the hypothesis that cognitive abilities should moderate the relationship between competitive worldviews and faking. Specifically, we expected a stronger relation between competitive worldviews and faking behavior with increasing cognitive abilities ( $H_2$ ).

### 3 | OVERVIEW OF STUDY

We tested our hypotheses on competitive worldviews and cognitive abilities in three separate samples to validate the generalizability of our findings. In all three samples, we used a within-subject faking design, in which the participants completed a personality test once under an honesty condition and once under an applicant condition, a paradigm frequently used in previous research (Burns & Christiansen, 2011). As a measure for faking, and thus, as our dependent variable, we used the change in the participants' personality scores between the two conditions. Because simple difference scores are subject to important methodological problems (e.g., these values are always correlated with the components from which they

were derived, i.e., with the personality of the participants), we used regression-adjusted difference scores (Burns & Christiansen, 2011). In this approach, the unstandardized residuals, left over from the prediction of the applicant personality scores by the honest personality scores, are used as indicators of individual faking behavior. Applicants' faking scores, resulting from this procedure, are independent of their underlying personality scores and possess better psychometric characteristics than simple difference scores (Burns & Christiansen, 2011). Finally, we tested our hypotheses using a regression analysis based on these regression-adjusted difference scores.

When selecting the samples, we focused on individuals who are at a point in their school or university education where applications are imminent. This entails two major advantages: First, such participants are rather young and should have little experience with the application process. Therefore, prior experience should have less or no influence on the examined effects. Second, the task of applying for a job or an internship and participating in a selection process will come in the (near) future to these individuals. To conclude, our studies took place in a controlled environment with a convenience sample. To demonstrate the robustness of our results, we (a) used three different established methods to measure cognitive abilities and (b) measured competitive worldviews using two methods: once with the method established in the literature (Duckitt et al., 2002; Roulin & Krings, 2016) and once with a newly developed questionnaire.

Using G\*Power (Faul, Erdfelder, Buchner, & Lang, 2009), we calculated  $N = 109$  as the minimum sample size required, based on a main effect of  $r = .30$  (the median effect size of the corresponding studies from the area of job interviews, Bourdage et al., 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016) and for a power of  $1 - \beta = .90$ . For the interaction effect, we refrained from calculating the required sample size, as there was no empirical data available at that time to estimate the size of the corresponding effect. The ethics board of the participating institutes has generally approved this type of study design for faking research, eliminating the need for a separate review of this study.

## 4 | SAMPLE 1

In our first sample, we looked at faking behavior in a personality test among psychology students who had to apply for an internship during their second or third year of studies. The corresponding data collection took place at a German university in the course of the first semester of the Bachelor's degree.

### 4.1 | Methods

#### 4.1.1 | Sample and procedure

Data were collected at three time points during an obligatory introductory lecture on statistics and research methods in psychology at a mid-sized German university. At the first testing session, cognitive abilities were measured. At the second testing session (4 weeks

later), we assessed competitive worldviews and personality under standard (honest) instructions. In the third test session (1 week after the second session), participants completed the personality test again, this time with instructions to do so as if they were applying for their mandatory internship. Therefore, they should imagine that they were in the process of applying for a very prestigious internship position and picture this situation as concretely as possible. Moreover, to further increase their involvement, participants were instructed to note down details of this situation (e.g., the challenges they expect to face during this internship). The participants were then presented with a letter from the fictitious company offering this internship. In the letter, the participants were thanked for their application and informed about the following selection process including various selection tests. All of these efforts were undertaken to maximize participants' engagement and to create a situation as close as possible to a real application situation.

Students' informed consent was obtained prior to their participation. Students participated voluntarily and had the chance to receive credit points for their studies. In total, data were collected from 133 persons who took part in all three testing sessions. The mean age was 21.24 years ( $SD = 3.29$ ) and 81.95% were women.

## 4.2 | Measures

### 4.2.1 | Competitive worldviews

To measure competitive worldviews, we used the 20-item *Competitive Jungle Social World View scale* (Duckitt et al., 2002). Sample items are "It's a dog-eat-dog world where you have to be ruthless at times" or "Winning is not the first thing; it's the only thing." Items are rated on a 5-point scale from 1 = *strongly disagree* to 5 = *strongly agree*. This scale has also been used in previous research on competitive worldviews in the context of faking and showed adequate reliability (Cronbach's  $\alpha = .92$ ; Roulin & Krings, 2016). All 20 items were translated from English into German by two independent translators. Based on the procedure of Douglas and Craig (2007), a collaborative translation approach was established after the independent translation. All items were translated as literally as possible. Fixed English idioms were replaced by German equivalents; for example, the aforementioned "dog-eat-dog" item was translated to: "Wir leben in einer Welt des 'Fressen-oder-gefressen-Werdens,' in der man manchmal rücksichtslos sein muss."

To check the validity of the translated scale, we assessed further variables that are linked to competitive worldviews according to Duckitt's Dual Process Model (2001). In line with Duckitt's research, competitive worldviews should be positively related to social dominance orientation, which captures a person's preference for hierarchical relationships between groups. In this realm, previous research has shown that people with stronger competitive worldviews also prefer the maintenance of hierarchical social systems (i.e., show a higher social dominance orientation). In addition, competitive worldviews should be negatively related to Honesty-Humility, a factor

of the HEXACO model of personality (Lee & Ashton, 2004), which measures a person's honesty, fairness, greed avoidance, and modesty. These aspects should conflict with the behavior of people with strong competitive worldviews, who seek for their own advantage without regard for others.

Our data showed a significant positive relationship between participants' ( $N = 133$ ) scores on the translated competitive worldviews scale and their scores on the German version of the 16-item *social dominance orientation scale* (Pratto, Sidanius, Stallworth, & Malle, 1994; Six, Wolfrath, & Zick, 2001),  $r = .40, p < .01$ . Participants' scores on the Honesty-Humility factor of the HEXACO-60 (Ashton & Lee, 2009) model of personality were significantly negatively related to their scores on the translated competitive worldviews scale,  $r = -.60, p < .01$ . Both of these correlations, as well as the good reliability of the scale (Cronbach's  $\alpha = .84$ ), indicate that the German version of the Competitive Jungle Social World View scale provides an adequate measurement of competitive worldviews.

### 4.2.2 | Cognitive ability

We used the short version of the Leistungsprüfungssystem 2 (LPS-2K) (Kreuzpointner, 2013; Kreuzpointner, Lukesch, & Horn, 2013), which is based on Carroll's (1997) intelligence theory. It measures a participant's cognitive abilities, with one overall score covering the aspects of crystallized intelligence, fluid intelligence, visual perception as well as cognitive speed. The LPS-2K demonstrated positive psychometric characteristics in previous research (Kreuzpointner et al., 2013) and takes 30 min to complete.

### 4.2.3 | Faking

We used the procedure introduced in *Overview of Study* and calculated regression-adjusted difference scores to measure faking. As a personality test, we used the Big Five Inventory (BFI, see e.g., John, Naumann, & Soto, 2008) in the German version by Fell and König (2016) with 44 items. The BFI is an easy-to-use and robust test that measures the Big Five personality traits (Neuroticism, Extraversion, Agreeableness, Openness to Experience, and Conscientiousness; Lang, Lüdtke, & Asendorpf, 2001). Sample items are "I see myself as someone who makes plans and follows through with them" (conscientiousness) and "I see myself as someone who likes to reflect, play with ideas" (openness to experience). Items are rated on a 5-point scale from 1 = *disagree strongly* to 5 = *agree strongly*. For simplification and better interpretation, Neuroticism was reverse-coded as Emotional Stability.

## 4.3 | Results

Table 2 presents the descriptive statistics and correlations for Sample 1. In line with the assumptions of our within-subject faking

paradigm, participants scored significantly higher in the applicant condition than in the honest condition for all five personality traits,  $t(132) = 3.10\text{--}10.84$ ,  $p < .01$ . An overview of the effect sizes of the faking manipulation for all three samples in this study compared to meta-analytical results is presented in Table 1. The variances of the personality scores remained basically the same for both conditions,  $F(132, 132) = 1.02\text{--}1.16$ ,  $p > .39$ . The faking effect sizes were in the range expected from meta-analytical results (Birkeland et al., 2006:  $d_{ALL} = .11\text{--}.44$ ; Viswesvaran & Ones, 1999:  $d_{ALL} = .47\text{--}.93$ ). The mean level of competitive worldviews found in this sample ( $M = 1.96$ ,  $SD = .44$ ) corresponded to previous studies in the faking context (Bourdage et al., 2018:  $M = 2.21$ ,  $SD = .51$ ; Roulin & Bourdage, 2017:  $M = 2.15$ ,  $SD = .54$ ; Roulin & Krings, 2016:  $2.24 \leq M \leq 2.39$ ,  $.52 \leq SD \leq .58$ ). The mean LPS-2K score ( $M = 95.62$ ,  $SD = 16.21$ ) was above that reported by the test authors (Kreuzpointner, 2013:  $M = 80.19$ ,  $SD$  only reported on a subtest level) but was fairly similar to scores from other samples of psychology students (Schwabe, 2018:  $M = 102.64$ ,  $SD = 21.07$ ). As indicated by previous research (Sibley & Duckitt, 2009), we found high correlations between participants' agreeableness and their competitive worldviews under the honest condition—and also under the applicant condition. In addition, the correlations between the personality scores under the two conditions were rather high ( $r = .78\text{--}.89$ ). In the course of calculating the regression-adjusted difference scores, the participants' honest personality scores explained 61.3%–78.3% of the variance in their applicant personality scores.

Table 3 summarizes the results concerning our two hypotheses, tested separately for all five personality traits. The results did not show a significant main effect of competitive worldviews ( $p_{ALL} \geq .20$ ), or of cognitive abilities ( $p_{ALL} \geq .08$ ). Moreover, the interaction of the two predictors did not significantly affect candidates' faking in the personality test for any of the personality traits ( $p_{ALL} \geq .27$ ). Therefore, both Hypothesis 1 and Hypothesis 2 had to be rejected for Sample 1. In total, competitive worldviews, cognitive abilities and the corresponding interaction explained only a very small proportion of the variance in the regression-adjusted difference scores

( $R^2 = .003\text{--}.039$ ). To further confirm the results, we (a) checked the influence of the control variables age and gender and (b) recalculated the models based on simple difference scores as used in some previous studies (e.g., McFarland & Ryan, 2000; Peterson et al., 2011). Neither had any influence on the results regarding the hypotheses of this study (results available upon request from the first author).

#### 4.4 | Discussion

Contrary to our assumptions based on previous research (Bourdage et al., 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016), we found neither an effect of competitive worldviews on faking behavior nor a moderation of this relationship by the participants' cognitive abilities. Nevertheless, all other key parameters (e.g., the effect sizes for faking) indicated that our study design worked as expected.

Another noteworthy fact is that the correlations between participants' personality scores under the honest and the applicant condition were in the range that could be expected from previous research with similar study designs, but rather in upper part of the distribution (e.g., compared to Biderman & Nguyen, 2009:  $r_{ALL} = .69\text{--}.85$ ; Christiansen, Burns, & Montgomery, 2005:  $r_{C,E} = .18\text{--}.34$ ; Griffith et al., 2007:  $r_C = .50$ ; Peterson et al., 2011:  $r_C = .62$ ) and reached or even exceeded ranges assumed as test–retest reliability (Gnambs, 2014:  $p_{ALL} = .80\text{--}.83$ ; Viswesvaran & Ones, 2000:  $p_{ALL} = .73\text{--}.78$ ). Despite this, we found a significant mean shift between the honest and applicant condition for all five personality traits: In combination with the statistical argument<sup>2</sup> that the interpersonal variance in faking is automatically negatively related to the correlation between the two conditions, it follows that most participants seem to have distorted their responses in a similar way. Accordingly, the shift in rank order of participants due to faking was negligible. This partially contradicts the results of previous research, which gave clear evidence of strong interindividual differences in faking behavior and of a negative effect of faking on the consistency of personality measurement (e.g., Raymark & Tafero, 2009; Salgado, 2016).

**TABLE 1** Effect size of the faking manipulation in the three samples compared to meta-analytical results

	Effect size in current study			Meta-analytical results					
				Within-subject studies		Between-subject studies			
	Sample 1	Sample 2	Sample 3	Viswesvaran and Ones (1999)		Viswesvaran and Ones (1999)		Birkeland et al. (2006)	
				Mean <i>d</i>	CI 90%	Mean <i>d</i>	CI 90%	Mean <i>d</i>	CI 95%
Conscientiousness	.89	.80	.48	.89	.14–1.63	.60	.29–.92	.45	.30–.59
Emotional stability	.94	.68	.53	.93	.31–1.54	.64	.44–.85	.44	.28–.59
Agreeableness	.56	.37	.25	.47	.18–.76	.48	.10–.85	.16	–.01 to .32
Extraversion	.66	.52	.29	.54	–.19 to 1.26	.63	.33–.93	.11	.01–.22
Openness to experience	.27	.52	.13	.76	–.25 to 1.78	.65	–.11 to 1.41	.13	.01–.24

Notes: Sample 1  $N = 133$ , Sample 2  $N = 137$ , Sample 3  $N = 268$ .

TABLE 2 Means, standard deviations, and correlations among main variables Sample 1

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1 CWs	1.96 (.44)	(.84)																		
2 SDO	2.19 (.61)	.40**	(.82)																	
3 Honesty-humility	3.60 (.59)	-.60**	-.22*	(.71)																
4 Cognitive abilities	95.62 (16.21)	-.09	.04	.03	(.94)															
5 Conscientiousness <sub>H</sub>	3.63 (.61)	-.20*	-.05	.26**	-.04	(.83)														
6 Emotional stability <sub>H</sub>	3.01 (.64)	-.26**	-.07	.17	-.13	.21*	(.81)													
7 Agreeableness <sub>H</sub>	3.72 (.52)	-.57**	-.24**	.39**	-.02	.37**	.29**	(.72)												
8 Extraversion <sub>H</sub>	3.47 (.65)	-.14	-.04	-.02	.14	.30**	.20*	(.86)												
9 Openness to experience <sub>H</sub>	3.66 (.59)	-.25**	-.19*	.19*	-.00	.02	.14	.18*	.13	(.82)										
10 Conscientiousness <sub>A</sub>	3.97 (.57)	-.22*	-.16	.27**	-.02	.78**	.23**	.39**	.07	-.03	(.85)									
11 Emotional stability <sub>A</sub>	3.38 (.64)	-.16	-.11	.09	-.09	.11	.81**	.23**	.23**	.08	.35**	(.85)								
12 Agreeableness <sub>A</sub>	3.89 (.50)	-.49**	-.28**	.33**	-.01	.26**	.29**	.82**	.14	.12	.45**	.40**	(.75)							
13 Extraversion <sub>A</sub>	3.66 (.61)	-.14	-.06	.02	-.05	.07	.26**	.21*	.89**	.10	.15	.35**	.27**	(.87)						
14 Openness to experience <sub>A</sub>	3.74 (.58)	-.18*	-.22*	.16	-.04	-.03	.14	.14	.10	.87**	.03	.22*	.20*	.21*	(.84)					
15 Conscientiousness <sub>R</sub>	.00 (.35)	-.10	-.20*	.10	.01	.00	.10	.16	-.06	-.08	.62**	.43**	.40**	.14	.08	-				
16 Emotional stability <sub>R</sub>	.00 (.38)	.07	-.10	-.07	.03	-.09	.00	-.01	-.02	-.06	.29**	.59**	.27**	.23**	.18*	.59**	-			
17 Agreeableness <sub>R</sub>	.00 (.29)	-.03	-.15	.03	.01	-.07	.09	.00	-.03	-.05	.23**	.36**	.57**	.17*	.15	.46**	.49**	-		
18 Extraversion <sub>R</sub>	.00 (.28)	-.03	-.06	.07	-.17	-.12	-.01	.08	.00	-.03	.18*	.32**	.32**	.45**	.26**	.44**	.54**	.45**	-	
19 Openness to experience <sub>R</sub>	.00 (.29)	.06	-.11	-.01	-.08	-.09	.05	-.04	-.02	.00	.12	.31**	.19*	.24**	.49**	.31**	.46**	.38**	.58**	-

Notes: The numbers in the diagonal represent Cronbach's alpha of the scales. CWs = competitive worldviews (measured with 20-item scale), SDO = social dominance orientation. Cognitive abilities were measured with the Leistungsprüfungsystem-2 Kurzversion (LPS-2K). The corresponding sum score as well as the reliability were calculated over all items in the LPS-2K. The subscript after the variable name indicates the source: <sub>H</sub> = honest condition, <sub>A</sub> = applicant condition, <sub>R</sub> = faking measured as regression-adjusted difference scores. Paired-sample *t* tests showed significant effects for all five personality traits; Conscientiousness  $t(132) = 10.24; p < .01; d = .89$ , Emotional stability  $t(132) = 10.84; p < .01; d = .94$ , Agreeableness  $t(132) = 6.42; p < .01; d = .56$ , Extraversion  $t(132) = 7.56; p < .01; d = .66$ , Openness to Experience  $t(132) = 3.10; p < .01; d = .27$ . Correlations are based on  $N = 133$ .

\* $p < .05$ ; \*\* $p < .01$ .

**TABLE 3** Regression models for faking on the five personality traits in Sample 1

Predictors	$\Delta$ Conscientiousness		$\Delta$ Emotional stability		$\Delta$ Agreeableness		$\Delta$ Extraversion		$\Delta$ Openness to Exp.	
	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
(Intercept)	.00 (-.06 to .06)	.91	.00 (-.07 to .06)	.91	.00 (-.05 to .05)	.96	.00 (-.04 to .05)	.92	.00 (-.05 to .05)	.97
CWs	-.09 (-.23 to .05)	.20	.05 (-.10 to .20)	.49	-.03 (-.14 to .09)	.66	-.02 (-.13 to .09)	.68	.04 (-.07 to .16)	.48
Cogn. abil.	-.00 (-.00 to .00)	.78	.00 (-.00 to .00)	.91	.00 (-.00 to .00)	.99	-.00 (-.01 to .00)	.08	-.00 (-.00 to .00)	.47
IA	-.01 (-.01 to .00)	.27	-.01 (-.01 to .00)	.27	-.00 (-.01 to .01)	.66	.00 (-.00 to .01)	.31	.00 (-.01 to .01)	.72
$R^2$	.019		.016		.003		.039		.010	

Notes:  $\Delta$  = Faking for the corresponding personality trait, measured as regression-adjusted difference score. Openness to Exp. = Openness to Experience; CWs = competitive worldviews; Cogn. abil. = cognitive abilities (measured with the Leistungsprüfungssystem-2 Kurzversion LPS-2K). IA = Interaction between competitive worldviews and cognitive abilities. All predictors were centered to enhance interpretability of the results. Confidence intervals (95%) are given in brackets below the corresponding *b*'s (the unstandardized regression weights).  $N = 133$ .

An explanation for our findings may be that participants in this particular sample had already acquired some knowledge about the psychological concept of personality and how personality questionnaires are scored (which might affect faking, König, Jansen, Jansen, & Lüscher Mathieu, 2017). This might have led participants to behave similarly, as they also had a shared idea of how to respond successfully to a personality test in a selection situation. To rule out such an explanation, we decided to replicate our study with a second academic sample without such knowledge.

## 5 | SAMPLE 2

In our second sample, we looked at faking behavior in a personality test among German university students of a teacher training program. In Germany, teacher training studies at a university last for at least 4.5 years and are followed by a practical part of teacher training, which usually lasts between 18 and 24 months ("Lehramtsreferendariat" in German). In German-speaking countries, there is a growing call to replace the current selection practice for teaching positions, which is often solely based on grades, with a system that places a stronger focus on appropriate individual characteristics for the teaching profession. Students in teacher training programs, like those in this sample, might also encounter selection instruments like personality tests in the future when applying for the practical part of their teacher training.

### 5.1 | Methods

#### 5.1.1 | Sample and procedure

Data were collected at two time points during an obligatory introductory lecture on educational assessment for sophomore teacher

students at a mid-sized German university. At the first testing session that took place during the first session of the lecture, we measured cognitive abilities. At the second testing session (4 weeks later), we measured competitive worldviews and the participants completed a similar within-person faking paradigm as in Sample 1. The scenario was adapted to the study program, and therefore, focused on an application for the practical part of teacher training rather than an application for an internship. Students' informed consent was obtained prior to their participation. Students participated voluntarily and had the chance to receive course credit. In total, data were collected from 137 persons who took part in both testing sessions. The mean age was 23.16 years ( $SD = 5.21$ ) and 78.10% were women.

### 5.2 | Measures

#### 5.2.1 | Competitive worldviews

The same German-language 20-item Competitive Jungle Social World View scale was used as in Study 1.

#### 5.2.2 | Cognitive ability

To measure participants' cognitive abilities, we used the Intelligenz-Struktur-Test-Screening (IST-Screening: Liepmann, Beauducel, Brocke, & Nettelstroth, 2012), a short version of the well-established Intelligence-Structure-Test 2000 R (I-S-T 2000 R; Liepmann et al., 2007). The IST-Screening is based on Thurstone's (1938) and Cattell's (1963) intelligence theories and measures verbal, numerical, and figural reasoning abilities with 20 items each (Liepmann et al., 2012). The overall score on the three ability facets indicates general reasoning ability, which is a good proxy for people's cognitive abilities (Guttman & Levy, 1991). The test authors have



**TABLE 4** Means, standard deviations, and correlations among main variables Sample 2

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 CWs	M(SD)															
2 Cognitive abilities	1.90 (.39)	(.81)														
3 Conscientiousness <sub>H</sub>	46.73 (4.82)	-.03	(.80)													
4 Emotional stability <sub>H</sub>	3.85 (.58)	-.22**	-.08	(.81)												
5 Agreeableness <sub>H</sub>	3.28 (.70)	-.11	-.06	.31**	(.85)											
6 Extraversion <sub>H</sub>	3.97 (.51)	-.52**	.05	.46**	.30**	(.76)										
7 Openness to experience <sub>H</sub>	3.68 (.69)	-.11	-.09	.29**	.39**	.17*	(.87)									
8 Conscientiousness <sub>A</sub>	3.68 (.62)	-.09	.01	.26**	.21*	.24**	.02	(.84)								
9 Emotional stability <sub>A</sub>	4.11 (.56)	-.17*	-.03	.83**	.19*	.36**	.23**	.02	(.83)							
10 Agreeableness <sub>A</sub>	3.58 (.64)	-.11	.00	.30**	.79**	.22**	.36**	.21*	.40**	(.84)						
11 Extraversion <sub>A</sub>	4.08 (.45)	-.48**	.04	.43**	.21*	.79**	.14	.11	.48**	.34**	(.72)					
12 Openness to experience <sub>A</sub>	3.83 (.64)	-.09	-.04	.25**	.29**	.11	.91**	.15	.33**	.41**	.18**	(.86)				
13 Conscientiousness <sub>R</sub>	3.82 (.57)	-.04	-.01	.13	.25**	.15	.24**	.90**	.12	.30**	.15	.22**	(.82)			
14 Emotional stability <sub>R</sub>	.00 (.31)	.02	.06	.00	-.12	-.05	-.01	-.14	.55**	.27**	.22**	.22*	.02	-		
15 Agreeableness <sub>R</sub>	.00 (.39)	-.02	.08	.08	.00	-.02	.09	.01	.40**	.62**	.28**	.29**	.17*	.59**	-	
16 Extraversion <sub>R</sub>	.00 (.27)	-.11	.01	.10	-.05	.00	.01	-.09	.32**	.27**	.61**	.15	.05	.43**	.50**	-
17 Openness to experience <sub>R</sub>	.00 (.27)	.03	.10	-.03	-.14	-.11	.00	-.17	.27**	.19*	.11	.42**	.01	.54**	.49**	.33**
	.00 (.25)	.09	-.03	.06	.05	-.09	.05	.00	.23**	.26**	.11	.20*	.44**	.33**	.36**	.29**
																.35**

Notes: The numbers in the diagonal represent Cronbach's alpha of the scales. CWs = competitive worldviews (measured with 20-item scale). Cognitive abilities were measured with the Intelligence-Struktur-Test-Screening. The subscript after the variable name indicates the source; <sub>H</sub> = honest condition, <sub>A</sub> = applicant condition, <sub>R</sub> = faking measured as regression-adjusted difference scores. Paired sample t tests showed significant effects for all five personality traits; Conscientiousness  $t(136) = 9.32; p < .01; d = .80$ , Emotional Stability  $t(136) = 8.01; p < .01; d = .68$ , Agreeableness  $t(136) = 4.27; p < .01; d = .37$ , Extraversion  $t(136) = 6.07; p < .01; d = .52$ , Openness to Experience  $t(136) = 6.13; p < .01; d = .52$ . Correlations are based on  $N = 137$ .  
\* $p < .05$ ; \*\* $p < .01$ .

**TABLE 5** Regression models for faking on the five personality traits in Sample 2

Predictors	$\Delta$ Conscientiousness		$\Delta$ Emotional stability		$\Delta$ Agreeableness		$\Delta$ Extraversion		$\Delta$ Openness to Exp.	
	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
(Intercept)	.00	.98	.00	.98	.00	.99	.00	.97	.00	.97
	(-.05 to .05)		(-.07 to .07)		(-.05 to .05)		(-.05 to .04)		(-.04 to .04)	
CWs	.02	.78	-.02	.79	-.08	.20	.02	.75	.06	.31
	(-.12 to .15)		(-.19 to .15)		(-.20 to .04)		(-.10 to .14)		(-.05 to .16)	
Cogn. abil.	.00	.38	.01	.34	-.00	.99	.01	.18	-.00	.87
	(-.01 to .02)		(-.01 to .02)		(-.01 to .01)		(-.00 to .02)		(-.01 to .01)	
IA	-.01	.34	-.01	.44	.01	.62	-.02	.12	-.02	.16
	(-.04 to .01)		(-.05 to .02)		(-.02 to .03)		(-.05 to .01)		(-.04 to .01)	
$R^2$	.011		.011		.014		.028		.023	

Notes:  $\Delta$  = Faking for the corresponding personality trait, measured as regression-adjusted difference score. Openness to Exp. = Openness to Experience; CWs = competitive worldviews; Cogn. abil. = cognitive abilities (measured with the Intelligenz-Struktur-Test-Screening); IA = Interaction between competitive worldviews and cognitive abilities. All predictors were centered to enhance interpretability of the results. Confidence intervals (95%) are given in brackets below the corresponding *b*'s (the unstandardized regression weights).  $N = 137$ .

reported good convergent and discriminant validity coefficients as well as adequate internal consistencies ( $\alpha = .87$ –.90; Liepmann et al., 2012).

### 5.2.3 | Faking

We used the same approach and personality test (Big Five Inventory; Fell & König, 2016) as in Sample 1 to measure faking. Due to organizational constraints, both conditions of the personality test had to be completed in one test session. Therefore, we varied the order of the conditions randomly between the participants in order to exclude any confounding effects. Faking scores were calculated as regression-adjusted difference scores between the two conditions of the personality test.

## 5.3 | Results

Table 4 presents the descriptive statistics and correlations for Sample 2. In line with the intended experimental manipulation, participants showed significantly higher personality scores in the applicant condition than in the honest condition,  $d = .37$ –.80,  $t(136) = 6.07$ –9.32,  $p < .01$  (see Table 1 for a comparison of these effect sizes with meta-analytical results). The variances of the personality scores remained basically the same for both conditions,  $F(136, 136) = 1.08$ –1.28;  $p > .15$ . Corresponding effect sizes were again in the range of previous research results (e.g., Birkeland et al., 2006; Hooper, 2007; Viswesvaran & Ones, 1999; see results section of Sample 1). The competitive worldviews scores ( $M = 1.90$ ,  $SD = .39$ ) were also comparable to previous studies (e.g., Bourdage et al., 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016; see results section of Sample 1) and the mean IST-Screening score matched the standard values of the test manual for this age and educational

group ( $M = 46.59$ ,  $SD = 4.82$  [21–25 years, with university entrance-level qualifications]; Liepmann et al., 2012). In accordance with previous research (Sibley & Duckitt, 2009), we found a high negative correlation between participants' agreeableness and their competitive worldviews, under both the honest and the applicant condition ( $r_{\text{Honest condition}} = -.52$ ,  $r_{\text{Applicant condition}} = -.48$ ). In this sample, the correlations between the personality scores under the two conditions were rather high ( $r = .79$ –.91); correspondingly, the honest personality scores of the participants explained 61.8%–80.5% of the variance in their applicant scores.

Table 5 summarizes the results regarding our two hypotheses, tested separately for all five personality traits. The results did not show a significant main effect of competitive worldviews ( $p_{\text{ALL}} > .20$ ), or of cognitive abilities ( $p_{\text{ALL}} > .18$ ). Moreover, the interaction of the two predictors did not significantly affect candidates' faking in the personality test for any of the personality traits ( $p_{\text{ALL}} > .12$ ). Therefore, both Hypothesis 1 and Hypothesis 2 were rejected for Sample 2. Overall, competitive worldviews, cognitive abilities and the corresponding interaction explained only a very small proportion of the variance in the regression-adjusted difference scores ( $R^2 = .011$ –.028). These results were also robust when faking scores were calculated based on simple difference scores or when results were controlled for further influencing variables (age, gender).

## 5.4 | Discussion

Similar to the results in Sample 1, we found neither the assumed effect of competitive worldviews on faking behavior nor a moderation of this relationship by the participants' cognitive abilities. Overall, we found exactly the same pattern of results as in Sample 1. Additionally, the correlations between the participants' personality scores under the honest condition and under the applicant condition

were comparable to Sample 1. As such, it is therefore unlikely that Sample 1 participants' knowledge about personality as a psychological construct and its assessment was the reason for the lack of effects associated with interindividual variations in faking. Taken together, the results of these two samples raise questions about the generalizability of findings concerning competitive worldviews (Bourdage et al., 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016) as well as a moderation effect of cognitive abilities (Roulin et al., 2016).

Another possible explanation for the lack of interindividual variance of faking might lie in the limitation to a sample consisting solely of university students and the associated indirect variance restriction due to admission requirements. To rule out this alternative explanation, we decided to repeat our study with a third, nonacademic, sample without such restrictions.

## 6 | SAMPLE 3

In our third sample, we focused on a relatively diverse group of school pupils shortly before graduation. The participants came from different tracks of secondary school, with graduation after 9, 10, or 12 years (lower track, medium track, and higher track, respectively). The data were collected as part of an application training course organized in cooperation with the Ministry of Education of a German Federal state. After graduation, pupils in Germany usually apply for an apprenticeship training position, a university place, or directly for a job in a company. In the course of the corresponding selection procedures, both companies and universities are increasingly using psychometric selection methods, including personality tests (Diekmann & König, 2015; Schuler, Hell, Trapmann, Schaar, & Boramir, 2007).

### 6.1 | Methods

#### 6.1.1 | Sample and procedure

Data were collected as part of an optional application training course, which was offered to pupils in preparation for future selection procedures. One week before the actual training, pupils filled out a questionnaire assessing competitive worldviews, Honesty-Humility, and personality under honest instructions. The application training itself was designed to reflect a real selection situation. After a brief introduction, the coaches played the role of human resource employees of a fictitious company. As part of a cover story, the pupils were told to imagine that they had applied for a job with this company and were now taking part in a selection process. During this training session, we measured cognitive abilities and participants completed the personality test again, this time with instructions to do so as if they were applying for the job specified in the cover story. Pupils' and their legal guardians' informed consent was obtained prior to their participation. Pupils did not receive any further compensation for their participation. In total, complete data were collected

from 268 participants. The mean age was 16.66 years ( $SD = 1.27$ ), 54.48% were women and the participants were between their 8th and 11th year of school education. The specific training course was conducted at six different secondary schools, with 25.37% of the participants attending a lower-track school, 16.04% a medium-track school, and 58.59% a higher-track school.

### 6.2 | Measures

#### 6.2.1 | Competitive worldviews

For organizational reasons and due to the distinctive nature of this sample, we did not use the Competitive Jungle Social World View scale in Sample 3. In particular, subject matter experts recommended against such a long (20 items with an average of 18 words per item) and linguistically demanding scale in this broad educational context. Therefore, we developed a short scale on competitive worldviews, which should capture the aspects underlying the construct (Darwinistic attitude, Social Dominance Orientation, Tough Mindedness, Machiavellianism; Duckitt et al., 2002) while being more comprehensible and appropriate for the time constraints in this sample. The main goal was not to reduce the Competitive Jungle Social World View scale to a manageable size, but rather to develop a new operationalization from scratch that focuses on content validity.

Based on the definition of competitive worldviews (Duckitt et al., 2002), we created a pool with 15 linguistically simple and short items. As in the original scale, all items were formulated according to the principle of indirect questioning (e.g., Fisher, 1993)—this means that they did not refer to the persons themselves but to the population in general—in order to lower socially desirable response tendencies. These 15 items were evaluated by five subject matter experts (four with a PhD in psychology and one with a Master degree in psychology) regarding their understandability. These 15 items were judged as well-formulated. An initial sample of German psychology students ( $N = 58$ ) filled out this 15-item version plus the original Competitive Jungle Social World View scale (Duckitt et al., 2002) in its German translation. These data were used to further reduce the scale by choosing the eight items with the highest correlation with the original scale and by simultaneously ensuring that the new scale still covered all four aspects of competitive worldview (Darwinistic attitude, social dominance orientation, tough mindedness, and Machiavellianism). Sample items are: "Most people think that their own success is the only thing that really matters in life" and "Most people are willing to manipulate others to achieve their goals." Items were rated on a 5-point scale from 1 = *disagree strongly* to 5 = *agree strongly*. An overview of the final eight German items as well as an English translation can be found in Appendix Table A1. In this sample, the final 8-item competitive worldviews short scale showed an acceptable reliability (Cronbach's  $\alpha = .77$ ).

In a further step, the competitive worldviews short scale was filled out by a sample of university students of a teacher training

program ( $N = 143$ ; independent sample of Sample 2 of this study) to examine the factorial structure of the scale. After checking sampling adequacy ( $KMO = .87$ ; meritorious according to Hutcheson & Sofroniou, 1999) a principal axis factor analysis was conducted with the eight items and showed a single-factor structure (determined by parallel analysis; O'Connor, 2000) that explained 42.1% of the total variance. Seven out of the eight items had factor loadings on the factor between .61 and .80; one item had a factor loading of .38. In this sample, the competitive worldviews short scale achieved good reliability (Cronbach's  $\alpha = .85$ ).

The competitive worldviews short scale was then tested in another validation sample ( $N = 76$ ) consisting mainly of school pupils and university students in their first semester, again showing a good reliability estimate (Cronbach's  $\alpha = .82$ ). In addition to the short scale, the participants completed the German version of the social dominance orientation scale (Pratto et al., 1994; Six et al., 2001) and the Honesty-Humility scale from HEXACO-60 (Ashton & Lee, 2009) as well as the German translation of the Competitive Jungle Social World View scale (Duckitt et al., 2002), all of which were used in Sample 1. In this sample, both scales measuring competitive worldviews showed similar uncorrected correlations with social dominance orientation (original scale  $r = .51, p < .01$  vs. short scale  $r = .40, p < .01$ ) as well as a concurrent relationship to Honesty-Humility (original scale  $r = -.54, p < .01$  vs. short scale  $r = -.27, p < .05$ ). Scores of the original and the short scale correlated considerably ( $r = .40, p < .01$ ).

In conclusion, the newly developed 8-item competitive worldviews short scale meets the objective of reducing the required response time (median response time: original scale = 212 s in total, short scale = 52 s in total) and the main objective of being linguistically adequate for pupils' samples as well as university students samples. To conclude, this short scale provides an adequate measurement of competitive worldviews especially in relation to the definition of the construct.

### 6.2.2 | Cognitive ability

We used a German translation of the English Wonderlic Personnel Test Form A (Wonderlic, 1996), which has already been used multiple times in research contexts (e.g., Albrecht, Paulus, Dilchert, Deller, & Ones, 2013). The Wonderlic Personnel Test (WPT) is a short-form cognitive ability test developed to measure a person's cognitive abilities (Wonderlic & Hovland, 1939). The WPT consists of 50 items from the areas of mathematics, reasoning as well as vocabulary and has a strict time limit of 12 min (Wonderlic & Hovland, 1939). The WPT has demonstrated good psychometric properties, for instance an excellent test-retest reliability of .94 over a period of 5 years (Dodrill, 1983) as well as considerable convergent validity ( $r = .61$  with other measurements of general mental ability) when used in student samples (Leverett, Matthews, Lassiter, & Bell, 2001). Besides that, the WPT is one of the most commonly used intelligence tests in both research and personnel selection (e.g., Super, 2006).

### 6.2.3 | Faking

We used the same approach as in Sample 1 and 2 to measure faking. Due to time constraints, we replaced the BFI with the corresponding short form of the Big Five Inventory (BFI-K: Rammstedt & John, 2005). The BFI-K measures the same five personality traits as the BFI with 21 instead of 44 items. Despite the short test length, the BFI-K has demonstrated fairly acceptable reliability (Cronbach's  $\alpha = .64-.86$ ) and similar validity compared to the longer test version in previous research (Rammstedt & John, 2005).

## 6.3 | Results

Table 6 presents the descriptive statistics and correlations for Sample 3. We found a significant faking effect for all five personality traits,  $d = .13-.53, t(267) = 2.10-8.67, p < .05$  (see Table 1 for a comparison of these effect sizes with meta-analytical results). The variances of the personality scores remained basically the same for both conditions,  $F(267, 267) = 1.00-1.27; p > .05$ . Corresponding effect sizes were in the lower range of previous research results (Birkeland et al., 2006; Viswesvaran & Ones, 1999). The mean score on the WPT ( $M = 23.15, SD = 6.88$ ) corresponded to that from other studies in the educational context ( $M = 26.7$ ; McKelvie, 1989). In Sample 3, we also found significant correlations between participants' agreeableness and their competitive worldviews in both conditions, although lower than in the other two samples ( $r_{\text{Honest condition}} = -.31$  and  $r_{\text{Applicant condition}} = -.12$  in Sample 3 compared to  $r_{\text{Honest condition}} = -.57$  and  $r_{\text{Applicant condition}} = -.49$  in Sample 1 and  $r_{\text{Honest condition}} = -.52$  and  $r_{\text{Applicant condition}} = -.48$  in Sample 2, all differences significant a  $p < .01$ , when compared with independent sample tests). In addition, participants' cognitive abilities, measured with the WPT, were significantly correlated with their competitive worldviews scores ( $r = .28$ ). Overall, the correlations between the personality scores under the two conditions were high ( $r = .47-.63$ ) and the honest personality scores of the participants explained 24.1%–43.6% of the variance in their applicant scores.

Table 7 summarizes the results concerning our two hypotheses, tested separately for all five personality traits. Our results showed no main effect of competitive worldviews on applicants' faking for four of the five personality traits ( $p_{C, ES, A, O} > .40$ ). The results suggested a significant effect of competitive worldviews ( $b = .13, p < .05$ ) on participants' faking behavior for Extraversion. Participants with stronger competitive worldviews seem to show a greater tendency for faking with respect to the personality trait extraversion. However, considering the large number of individual tests carried out so far, this single significant effect only supports the corresponding Hypothesis 1 to an insufficient degree. If the significance level is adjusted for multiple testing (e.g., by Holm-Bonferroni method: Holm, 1979), the effect of competitive worldviews does not reach significance. There were also significant main effects of participants' cognitive abilities on faking of Emotional Stability ( $b = .01, p < .05$ ) and faking of Extraversion ( $b = .01, p < .05$ ), which both

TABLE 6 Means, standard deviations, and correlations among main variables Sample 3

Variable	M(SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 CWs	3.34 (.67)	(.80)															
2 Cognitive abilities	23.15 (6.88)	.28**	–														
3 Conscientiousness <sub>H</sub>	3.52 (.71)	–.00	–.00	(.70)													
4 Emotional stability <sub>H</sub>	3.12 (.81)	–.07	.21**	.17**	(.67)												
5 Agreeableness <sub>H</sub>	3.05 (.71)	–.31**	–.18**	.14*	–.05	(.55)											
6 Extraversion <sub>H</sub>	3.29 (.78)	–.04	.19**	.15*	.31**	.04	(.70)										
7 Openness to experience <sub>H</sub>	3.51 (.72)	.16**	.05	.25**	–.06	.04	.10	(.57)									
8 Conscientiousness <sub>A</sub>	3.84 (.63)	.07	.09	.49**	.04	.05	.14*	.11	(.74)								
9 Emotional stability <sub>A</sub>	3.47 (.74)	–.05	.23**	.04	.63**	–.10	.33**	–.09	.27**	(.71)							
10 Agreeableness <sub>A</sub>	3.23 (.70)	–.12*	–.05	.04	–.11	.47**	.05	.08	.16**	.04	(.64)						
11 Extraversion <sub>A</sub>	3.48 (.78)	.10	.24**	.12*	.24**	–.03	.66**	.01	.30**	.38**	.09	(.79)					
12 Openness to Experience <sub>A</sub>	3.59 (.77)	.16**	.13*	.12	–.11	–.01	.09	.61**	.25**	–.03	.11	.23**	(.73)				
13 Conscientiousness <sub>R</sub>	.00 (.55)	.08	.11	.00	–.05	–.02	.07	–.02	.87**	.28**	.16**	.28**	.22**	–			
14 Emotional stability <sub>R</sub>	.00 (.57)	.00	.12	–.08	.00	–.09	.18**	–.07	.31**	.78**	.13*	.30**	.05	.41**	–		
15 Agreeableness <sub>R</sub>	.00 (.62)	.03	.04	–.03	–.09	.00	.04	.07	.15*	.09	.88**	.12	.12*	.19**	.20**	–	
16 Extraversion <sub>R</sub>	.00 (.59)	.17**	.16**	.03	.05	–.07	.00	–.08	.29**	.22**	.08	.75**	.23**	.31**	.24**	.13*	–
17 Openness to experience <sub>R</sub>	.00 (.61)	.08	.13*	–.04	–.10	–.04	.04	.00	.24**	.02	.07	.29**	.79**	.29**	.11	.10	.35**

Notes: The numbers in the diagonal represent Cronbach's alpha of the scales. CWs = competitive worldviews (measured with 8-item scale). Cognitive abilities were measured with the Wonderlic Personnel Test. No internal reliability is given for the Wonderlic Personnel Test, since it is a speeded test and corresponding coefficients (like Cronbach's alpha) would overestimate the reliability. The subscript after the variable name indicates the source; <sub>H</sub> = honest condition, <sub>A</sub> = applicant condition, <sub>R</sub> = faking measured as regression-adjusted difference scores. Paired sample t tests showed significant effects for all five personality traits; Conscientiousness  $t(267) = 7.81; p < .01; d = .48$ , Emotional Stability  $t(267) = 8.67; p < .01; d = .53$ , Agreeableness  $t(267) = 4.10; p < .01; d = .25$ , Extraversion  $t(267) = 4.73; p < .01; d = .29$ , Openness to Experience  $t(267) = 2.10; p < .05; d = .13$ . Correlations are based on  $N = 268$ .

\* $p < .05$ ; \*\* $p < .01$ .

**TABLE 7** Regression models for faking on the five personality traits in Sample 3

Predictors	$\Delta$ Conscientiousness		$\Delta$ Emotional stability		$\Delta$ Agreeableness		$\Delta$ Extraversion		$\Delta$ Openness to Exp.	
	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
(Intercept)	-.01 (-.07 to .06)	.89	-.02 (-.09 to .06)	.67	.00 (-.08 to .08)	.99	-.02 (-.09 to .06)	.67	.01 (-.07 to .08)	.86
CWs	.04 (-.06 to .15)	.40	-.02 (-.13 to .09)	.72	.02 (-.10 to .13)	.77	.13 (.02 to .24)	<b>.02</b>	.03 (-.08 to .15)	.56
Cogn. abil.	.01 (-.00 to .02)	.12	.01 (.00 to .02)	<b>.03</b>	.00 (-.01 to .01)	.65	.01 (.00 to .02)	<b>.04</b>	.01 (-.00 to .02)	.09
IA	.00 (-.01 to .02)	.60	.01 (-.00 to .03)	.12	-.00 (-.02 to .02)	.95	.01 (-.00 to .03)	.12	-.01 (-.02 to .01)	.52
$R^2$	.016		.024		.002		.051		.020	

Notes:  $\Delta$  = Faking for the corresponding personality trait, measured as regression-adjusted difference score. Openness to Exp. = Openness to Experience; CWs = competitive worldviews; Cogn. abil. = cognitive abilities (measured with the Leistungsprüfsystem-2 Kurzversion LPS-2K). IA = Interaction between competitive worldviews and cognitive abilities. All predictors were centered to enhance interpretability of the results. Confidence intervals (95%) are given in brackets below the corresponding *b*'s (the unstandardized regression weights).  $N = 268$ . *p* values below the 5% criterion are printed in bold.

disappeared when corrected for multiple testing. The interaction of the two predictors also did not significantly affect candidates' faking in the personality test for any of the personality traits ( $p_{ALL} > .12$ ). In conclusion, both Hypothesis 1 and Hypothesis 2 can be considered as rejected for Sample 3. Competitive worldviews, cognitive abilities and the corresponding interaction only explained a very small proportion of the variance in the regression-adjusted difference scores ( $R^2 = .002$ – $.051$ ). The results from Sample 3 were also robust when faking scores were calculated based on simple difference scores, when results were controlled for further influencing variables (age, gender), and when a potential multilevel structure of schools and classes was taken into account.

## 6.4 | Discussion

As in the previous samples, we did not find any systematic evidence for our two hypotheses in this third group. Moreover, we did not find the effect of competitive worldviews on faking behavior reported in previous studies in the interview context (Bourdage et al., 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016), and this relationship was not moderated by the participants' cognitive abilities. Again, all remaining key parameters (e.g., the effect sizes for faking) indicated that the study design worked as expected (Roulin et al., 2016). Furthermore, Sample 3 represents a broad cross section due to a larger age cohort, is fairly gender-balanced, and does not focus on a sample of academic students. We can therefore essentially rule out homogeneity of the participants and the associated restriction of variances as reasons for the insignificant results in the current study. Overall, the findings for this third sample support the conclusion that competitive worldviews are not as important for faking in

personality tests as they are in the context of interviews. Moreover, cognitive abilities do not act as a moderator for this nonexistent relationship. In the general discussion, we discuss possible reasons for these findings and their consequences.

## 7 | GENERAL DISCUSSION

### 7.1 | Contribution to theory

In response to calls from the authors of the dynamic model of faking behavior (Roulin et al., 2016), the present study investigated the motivational influence of competitive worldviews in conjunction with cognitive abilities as an aspect of the capacity to fake for the first time in the area of personality assessment. Contrary to our expectations fueled by the results of job interview research, we found that the results regarding the relationship between competitive worldviews and interview faking do not automatically generalize to personality assessment. In none of our three samples did we find any reliable evidence that competitive worldviews affected faking on any of the five personality dimensions examined, and our results did not suggest a moderating effect of cognitive abilities. At this point, it should be noted that due to our approach with three different samples and the considerable sample sizes, test power problems should be largely ruled out as the cause for this unexpected outcome. Furthermore, we employed different and carefully validated methods in all three samples to assess competitive worldviews and cognitive abilities, which makes it rather unlikely that our study results can be attributed to problems in the assessment of competitive worldviews and cognitive abilities. In the light of our findings, we would like to present two potential explanations in the next paragraphs,

which in turn may have very different implications for the canon of faking research.

In the simplest case, the results regarding competitive worldviews from the domain of job interviews may not be generalizable to personality assessment because applicants might perceive competition in the two selection situations differently. With regard to personality tests, organizations often invite applicants for many different positions to attend large group tests, or the procedure even takes place completely online. Here, the competitive situation is more like a school exam, in which the objective is to prove one's own suitability, rather than a fight between applicants. However, once applicants have made it to the job interview stage, it may become clearer that it is now a matter of competing directly with others who have also made it this far. However, as pointed out by an anonymous reviewer, such a perception by candidates would not be an erroneous assumption on behalf of applicants. The proportion of individuals who pass a personality test is typically much smaller than those who pass an interview (e.g., large multinational corporation only pass 5%–10% of applicants from the stage of a standardized assessment to the interview phase, but then interview 3–4 candidates for a job and hire one). In fact, the testing situation in personality assessment is actually much more competitive. As argued by Roulin and Krings (2016, p. 646), "competitive worldviews are particularly influential when competition with others is salient." We may therefore not have been able to reproduce the results from the interview context because competition with others may not be as salient in personality tests as in job interviews. Accordingly, competitive worldviews may have different effects on faking motivation and faking behavior in these two types of selection procedure: (a) selection procedures in which applicants interact directly with each other (i.e., in which the competitors are directly obvious) and (b) selection procedures in which it is clear to applicants that they only have to compete with a small number of equally qualified others (i.e., at the end of a multilevel selection process). In general, this argument also implies that the assumptions regarding competitive worldviews in the dynamic model of applicant faking (Roulin et al., 2016) may fit better with some types of selection procedure than with others.

A different explanation may lie in the differences in study design. Our study examined faking using a laboratory-based within-subject faking design for all three samples—a design which is widely used in current faking research (Burns & Christiansen, 2011)—whereas studies in the context of job interviews focused on self-reports of faking intention or previous faking behavior (e.g., Roulin & Krings, 2016). However, the within-subject faking paradigm, in which participants complete a personality test under different instructions, is not without criticism. Ones, Viswesvaran, and Reiss (1996), for example, pointed out that the mental processes underlying the completion of a personality test might differ between laboratory and field situations. Corresponding empirical evidence can be seen in the different effect sizes (Birkeland et al., 2006; Viswesvaran & Ones, 1999), as well as in discrepancies between the two research approaches regarding the construct validity of personality tests (Schilling et al., 2016). In all three of our samples, we found significant faking effects insofar

as the participants achieved higher personality scores in the applicant conditions (see Table 1) and also the ratios in standard deviation between honest and applicant condition (often called *u*-values) were higher but approached the range observed in meta-analytical results (Salgado, 2016). However, in all samples, we also found high to very high correlations between the personality scores of the two conditions ( $r = .47-.91$ )—lying in the range of what could be expected from previous research, but in the upper part of the distribution. In contrast to previous research (e.g., McFarland & Ryan, 2000; Raymark & Tafero, 2009), these findings in particular indicate that there was rather little variance in the faking of our participants and that all of them seem to have distorted their scores to a similar degree. Based on the assumption that faking behavior is the product of a motivational and an ability component (e.g., McFarland & Ryan, 2006; Roulin et al., 2016), such a uniform faking effect could be interpreted as suggesting that there were few individual differences between our participants in these two components. In our opinion, the manipulation through instruction or cover story in such a laboratory setting could lead to an equally strong faking motivation in all participants, regardless of the individual antecedents of this motivational aspect of faking. In line with this idea, it might be unsurprising that we were unable to find any effect of competitive worldviews in this specific setting.

Both presented explanations assume that motivational differences between the participants played only a minor role in our specific study. According to the proposed relationship between motivation and ability (e.g., McFarland & Ryan, 2006; Roulin et al., 2016; Snell et al., 1999), cognitive abilities should then be the main predictor of faking behavior in this case. However, we found this direct effect of cognitive abilities only in the third sample, where it only emerged for two of the five dimensions. This may be due to the fact that faking in a personality test with single-stimulus items, as used in this study, may only require a minimum level of cognitive ability. If applicants possess a minimum level of ability to identify what the socially desired answers to the items in such a personality questionnaire are, there might not be any additional benefits of cognitive abilities for faking behavior. In our opinion, the effect of cognitive abilities on faking behavior might, therefore, be more pronounced in self-assessment tools where faking is more cognitively challenging, such as forced-choice personality tests (Schilling et al., 2016; Vasilopoulos, Cucina, Dyomina, Morewitz, & Reilly, 2006).

## 7.2 | Future research directions

The two theoretical ideas mentioned above give rise to concrete suggestions for further research. If selection procedures differ in the extent to which applicants perceive competition among each other, future research should look at the relationship between competitive worldviews and faking selection procedures in which competition between applicants is more or less salient. For example, assessment centers could be of particular interest for research, since they are usually only carried out with applicants who have reached a shortlist, and also involve direct interaction between applicants. In such

situations, we would expect even higher effects of competitive worldviews on faking than in interviews.

Following our second line of argument, our findings support the idea put forward by Ones et al. (1996) that the processes in applicants' minds are not the same in a laboratory situation as they are in a real application situation. This might be especially problematic considering that many of the findings from faking research are based on such within-subject designs (e.g., van Hooft & Born, 2012; Pelt, van der Linden, & Born, 2018; Tett et al., 2012), while the distinct motivational character of these designs might limit the transferability of corresponding results to real-life faking. Therefore, in our opinion, it might be a good strategy for further faking researchers to focus more on approaches with real applicants and on real application situations. Due to the practical difficulties involved, it may also be useful to refer to applicants' self-reported behavior during past selection situations, as was done recently in the context of job interviews (Bourdage et al., 2018; Roulin & Krings, 2016).

In addition, further research should shed more light on the psychometric differences between laboratory and field studies (for instance regarding correlations and *u*-values between honest and applicant conditions) and examine the effect of different faking manipulations. This could not only help to evaluate the transferability of previous research results, but also facilitate the design of laboratory studies that reflect best the faking of real applicants.

Furthermore, validation of the findings for forced-choice test, which can be considered as fairly robust against faking seems necessary (Cao & Drasgow, 2019; Martin, Bowen, & Hunt, 2002). Since it should be more difficult to answer in a socially desirable manner, if one item includes two equally desirable dimensions (Vasilopoulos et al., 2006), the participants' cognitive abilities could have a stronger effect on faking for this type of personality tests. In this context, an additional measurement or manipulation of applicants' cognitive loads might bring further important insights into the relationship between cognitive abilities and faking.

### 7.3 | Implications for personnel selection

Understandably, every organization that has to select applicants tries to find those who will go on to be the most successful. In the same way, it is also understandable that applicants seek to present themselves in the best possible way to a future employer. The situation only becomes problematic when some applicants distort their answers more than others, and as a result, the company no longer selects the most suitable applicants (e.g., Christiansen, Goffin, Johnston, & Rothstein, 1994; Donovan et al., 2014; Rosse, Stecher, Miller, & Levin, 1998). In this context, many authors suggest that the subjective perception of the competition for a job can have a considerable influence on individual faking (cf. Roulin et al., 2016; Tett & Simonet, 2011). However, considering our findings in relation to previous research efforts on competitive worldviews (Bourdage et al., 2018; Roulin & Bourdage, 2017; Roulin & Krings, 2016), it seems that competitive worldviews, as an aspect of this perception,

play only a subordinate role in personality tests. It is precisely this finding that could have interesting consequences for the practical use of self-report procedures in the selection process. In our opinion, competitive worldviews might be a strong predictor of applicant faking especially if the competitive nature of the situation is quite salient—if the applicants directly see that they are in competition with other applicants. If organizations wish to minimize the influence of competitive worldviews on the final selection decision, it might be a good idea to avoid such a situation as far as possible. In this context, online testing might have an advantage over group testing on site.

### 7.4 | Limitations

Two main limitations of the present study need to be mentioned. First and foremost, our study examined the phenomenon of faking in a lab setting and not with real applicants in a concrete selection situation. Although study designs such as ours are one of the standard tools of faking research, some researchers (e.g., Ones et al., 1996) question the comparability of laboratory and field studies—a position that might also be supported by our own findings (see the third paragraph of *Contribution to Theory* for a more detailed discussion).

Second, the participants in our samples are exclusively young people at the beginning of their working lives. We imposed this restriction deliberately because we considered this group of people to be particularly relevant to the context addressed in our study, as these individuals will all be applying for jobs and internships in the (near) future. Nevertheless, the question remains whether the corresponding results can be generalized to all age groups, especially given that some empirical studies suggest less faking among older workers (e.g., Ispas et al., 2014). It should also be mentioned here that we did not control for our participants' prior knowledge about the job we used for our faking manipulation. As a certain amount of knowledge may be necessary to interpret the cues on the requirements of a job, the differences in participants' cognitive abilities may not have been effective here. Although we have deliberately used a very generic faking manipulation without a job advertisement for a specific job to eliminate potential differences in participants' knowledge, this circumstance might be a reason for the lack of effects of cognitive abilities.

### 7.5 | Conclusion

The goal of this study was to examine the assumptions put forward in the recently presented dynamic model of faking behavior regarding the relationship between competitive worldviews, cognitive abilities, and faking for the domain of personality testing. Despite three comprehensive laboratory samples and different operationalizations of the constructs, we were unable to reproduce the effects found in the context of job interviews. Moreover, in contrast to previous research findings, all participants in our samples showed



similarly pronounced faking behavior. This may lead to two possible conclusions: Either the applicants are less aware of the competitive situation in personality testing, meaning that competitive world-views have little influence, or laboratory studies are less suitable to investigate factors influencing faking motivation due to their specific motivational character. Both options should be taken into account in future research.

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## ENDNOTES

- 1 The Big Five dimensions of the corresponding results are indicated by their abbreviations. Conscientiousness = C; Emotional Stability = ES; Agreeableness = A; Extraversion = E; Openness to Experience = O; all Big Five Dimensions = ALL.
- 2 The individual faking of participants (individual differences in personality scores between honest and applicant condition) varies in relation to the mean faking effect (mean difference between the two conditions). The higher the correlation between the personality scores from both conditions, the lower the variance of the individual faking.<sup>2</sup>

$$\text{It applies: } \text{Var}_{(f)} = \frac{\text{Var}_{(h)} + \text{Var}_{(a)} - 2\text{Cov}_{(h,a)} \text{ and } r_{(h,a)} = \frac{\text{Cov}_{(h,a)}}{\sqrt{\text{Var}_{(h)}} \sqrt{\text{Var}_{(a)}}}{\Rightarrow \text{Var}_{(f)} = \text{Var}_{(h)} + \text{Var}_{(a)} - 2r_{(h,a)} \sqrt{\text{Var}_{(h)}} \sqrt{\text{Var}_{(a)}}}$$

$$\text{Given: } \text{Var}_{(h)} = \frac{\text{Var}_{(a)}}{\Rightarrow \text{Var}_{(f)} = 2\text{Var}_{(h)} (1 - r_{(h,a)})}$$

$\text{Var}_{(f)}$  = variance in individual faking,  $\text{Var}_{(h)}$  = variance in honest scores,  $\text{Var}_{(a)}$  = variance in applicant scores,  $\text{Cov}_{(h,a)}$  = covariance between honest and applicant scores,  $r_{(h,a)}$  = correlation between honest and applicant scores.

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## APPENDIX

TABLE A1 Items of the competitive worldviews short scale developed for Sample 3

Item (German, English)	Covered aspect
Die meisten Menschen... Most people...	
... sind der Meinung, dass der eigene Erfolg das einzige ist, das im Leben zählt. ... believe that their own success is the only thing that matters in life.	DA
... denken, dass es wichtig ist Macht zu besitzen. ... think that it is important to have power.	SDO
... nehmen Rücksicht auf andere Personen. ... show respect for other people.	TM (-)
... denken, dass der Zweck alle Mittel rechtfertigt. ... think that the end justifies all means.	MA
... sind dazu bereit ohne Gegenleistung zu helfen. ... are willing to help without receiving anything in return.	TM (-)
... würden Regeln brechen, um erfolgreich zu sein. ... would break rules to be successful.	MA
... halten einen Kompromiss für eine gute Lösung eines Streits. ... see a compromise as a good solution to a conflict.	DA (-)
... sind bereit andere Personen auszunutzen, um ihre Ziele zu erreichen. ... are willing to take advantage of others to achieve their goals.	MA

Notes: The abbreviations in the second column indicate the aspect of competitive worldviews construct covered by this item: DA, Darwinistic attitude; MA, Machiavellianism; SDO, social dominance orientation; TM, tough mindedness. Items with reversed polarity are additionally marked with (-).