J Bus Ethics (2018) 153:725–740
https://doi.org/10.1007/s10551-016-3373-6

ORIGINAL PAPER

Understanding the Interplay Among Regulatory Self-Efficacy, Moral Disengagement, and Academic Cheating Behaviour During Vocational Education: A Three-Wave Study

Roberta Fida[1,2] · Carlo Tramontano[3] · Marinella Paciello[4] · Valerio Ghezzi[2] · Claudio Barbaranelli[2]

Received: 5 January 2016 / Accepted: 28 October 2016 / Published online: 9 November 2016

Abstract The literature has suggested that to understand the diffusion of unethical conduct in the workplace, it is important to investigate the underlying processes sustaining engagement in misbehaviour and to study what occurs during vocational education. Drawing on social-cognitive theory, in this study, we longitudinally examined the role of two opposite dimensions of the self-regulatory moral system, regulatory self-efficacy and moral disengagement, in influencing academic cheating behaviour. In addition, in line with the theories highlighting the bidirectional relationship between cognitive processes and behaviour, we aimed to also examine the reciprocal influence of behaviour on these dimensions over time. Overall, no previous studies have examined the longitudinal interplay between these variables. The sample included 866 (62.8% female) nursing students who were assessed three times annually from the beginning of their vocational education. The findings from a cross-lagged model confirmed that regulatory self-efficacy and moral disengagement have opposite influences on cheating behaviour, that regulatory self-efficacy negatively influences not only the engagement in misconduct but also the justification mechanisms that allow the divorce between moral standards and action, and that moral disengagement and cheating behaviour reciprocally support each other over time. Specifically, not only did moral disengagement influence cheating behaviour even when controlling for its prior levels, but also cheating behaviour affected moral disengagement one year later, controlling for its prior levels. These findings suggest that recourse to wrongdoing could gradually lead to further normalising this kind of behaviour and morally desensitising individuals to misconduct.

Keywords Regulatory self-efficacy · Moral disengagement · Self-regulation · Unethical behaviour · Nurse · Longitudinal study

Introduction

Due to the diffusion of global scandals, several studies have been conducted that seek to go beyond a rational approach to moral conduct and business ethics, and understand why workers engage in 'outside the rules' behaviour (e.g., Fox et al. 2001; Spector and Fox 2005). Considering individuals to be consistently conscious, controlled, and always able to discriminate between right and wrong does little to help understand the diffusion of unethical conduct and the reasons individuals may engage in it (Bersoff 1999; De Cremer and Tenbrunsel 2012). According to Bandura, 'most of the traditional moral theories tell only half of the story in the regulation of moral behaviour' (2016, p. 24). For example, some of them do not fully examine the mechanisms by which

The authors wish it to be known that, in their opinion, the first three authors should be regarded as joint first authors.

Electronic supplementary material The online version of this article (doi:10.1007/s10551-016-3373-6) contains supplementary material, which is available to authorized users.

✉ Roberta Fida
r.fida@uea.ac.uk

[1] Norwich Business School, University of East Anglia, Norwich Research Park, Norwich NR4 7TJ, UK

[2] Department of Psychology, Sapienza University of Rome, Rome, Italy

[3] Centre for Research in Psychology, Behaviour and Achievement, Coventry University, Coventry, UK

[4] Uninettuno Telematic International University, Rome, Italy

moral standards are translated into actions. They do not examine how moral standards influence moral conduct in different situations and assume that moral standards are invariant across different realms of life (Bandura 2016). However, social-cognitive theory (Bandura 1986) represents a comprehensive framework explaining the self-regulatory processes linking thoughts and actions that allow understanding why people engage (or not) in misbehaviour in different settings and domains of activities (Bandura 2016). This theoretical perspective considers, on the one hand, the regulatory processes that inhibit deviant and transgressive conduct, keeping the behaviour in line with moral standards even in situations in which wrongdoing may result in personal gain or is promoted by peer and social pressure. On the other hand, it considers the mechanisms that temporarily silence the internal moral control system, allowing 'otherwise good people' to engage in behaviour not in line with their standards without resulting in self-condemnation.

In this study, adopting a social-cognitive perspective, we examine two variables related to these different 'sides' of the self-regulatory system, namely regulatory self-efficacy (R-SE) and moral disengagement (MD). Additionally, we aim to investigate their interplay with academic cheating behaviour over time. Regulatory self-efficacy is defined as individuals' beliefs in their capability to resist peer pressure to misbehave (Bandura et al. 2001). Alternatively, MD is defined as the set of cognitive mechanisms that alter or reframe misconduct, allowing people to engage in this type of behaviour without incurring negative self-reactions or self-sanctions (Bandura 1991). Academic cheating behaviour is defined as a form of deviant conduct exhibited during vocational education (McCabe et al. 2012; Murdock and Anderman 2006).

Overall, drawing on social-cognitive theory, we aim to test the model depicted in Fig. 1. In particular, consistent with the literature attesting to the pivotal role of R-SE in discouraging transgressive behaviour and MD in fostering it (e.g., Bandura et al. 2001), we aim to empirically test their effect on later cheating behaviour. In addition, consistent with theories suggesting the bidirectional relationship between personal characteristics and behaviour (Bandura 1986; Bem 1972), we hypothesise not only that both R-SE and MD affect later cheating behaviour but also that cheating behaviour influences them over time. Specifically, the engagement in this type of behaviour is expected to (a) weaken the self-beliefs about the capability to resist peer pressure that inhibit misconduct (R-SE) and (b) reinforce the cognitive mechanisms that selectively silence the internal moral control and that justify and sustain the misconduct (MD). Finally, we aim to investigate the reciprocal influence between R-SE and MD. Specifically, considering them to be two opposite dimensions of the self-regulatory process, it is expected that they negatively influence each other both directly and indirectly through their effects on cheating behaviour over time.

In the following sections, we describe the model under study and the rationale for the hypothesised pathways in more detail.

In this manuscript, we focus on academic cheating behaviour because it is crucial to understand what happens during vocational education to prevent future unethical behaviour in the workplace (McCabe et al. 2012; Treviño and Nelson 2011). Indeed, the literature suggests that engagement in cheating behaviour shapes future ethical conduct in the workplace (e.g., Harding et al. 2004; LaDuke 2013; McCabe et al. 2012; Nonis and Swift 2001; Wowra 2007). In addition, while the award of a degree is a certification of competence, when the recipient is a cheater, their competence does not match that of honest graduates, which has the potential to damage the labour market that the graduates are entering. Finally, academic dishonesty is widely recognised as an increasingly pervasive problem (e.g., McCabe et al. 2001; Murdock and Anderman 2006; Simkin and McLeod 2010), and its diffusion may lead to normalising unethical behaviour and fostering a mindset that predisposes individuals to engage in this kind of behaviour in different contexts.

Overall, the present study contributes to the literature on unethical conduct and social-cognitive theory in several ways. This is the first paper examining the longitudinal interplay between two opposite social-cognitive dimensions of the self-regulatory system in influencing misbehaviour over time. Although some researchers have investigated the role of R-SE in influencing MD (Bandura et al. 2001; d'Arripe-Longueville et al. 2010), no previous studies have tested their reciprocal influence. The concurrent examination of these two variables is in line with Bandura's recommendation regarding studying both self-regulatory beliefs and MD to understand how the moral control system works (Bandura 2016). Specifically, while R-SE inhibits transgressive conduct, MD fosters it. In addition, previous findings almost exclusively provide empirical support for the idea that both MD and R-SE are antecedents of deviant and transgressive conduct (e.g., Bandura et al. 2001). However, an opposite relationship in which behaviour influences these dimensions of the moral self-regulatory system can also be hypothesised in line with social-cognitive (Bandura 1978, 1986) and self-perception (Bem 1972) theories. Although Bandura (1986) posited a reciprocal relationship between cognitive processes and behaviour, to the best of our knowledge, no studies have investigated the cross-lagged relationships of both MD and R-SE with misbehaviours, and we aim to fill this gap.

Specifically, our contribution will provide further knowledge about these paths using a longitudinal design that examines the influence of behaviour on R-SE and MD

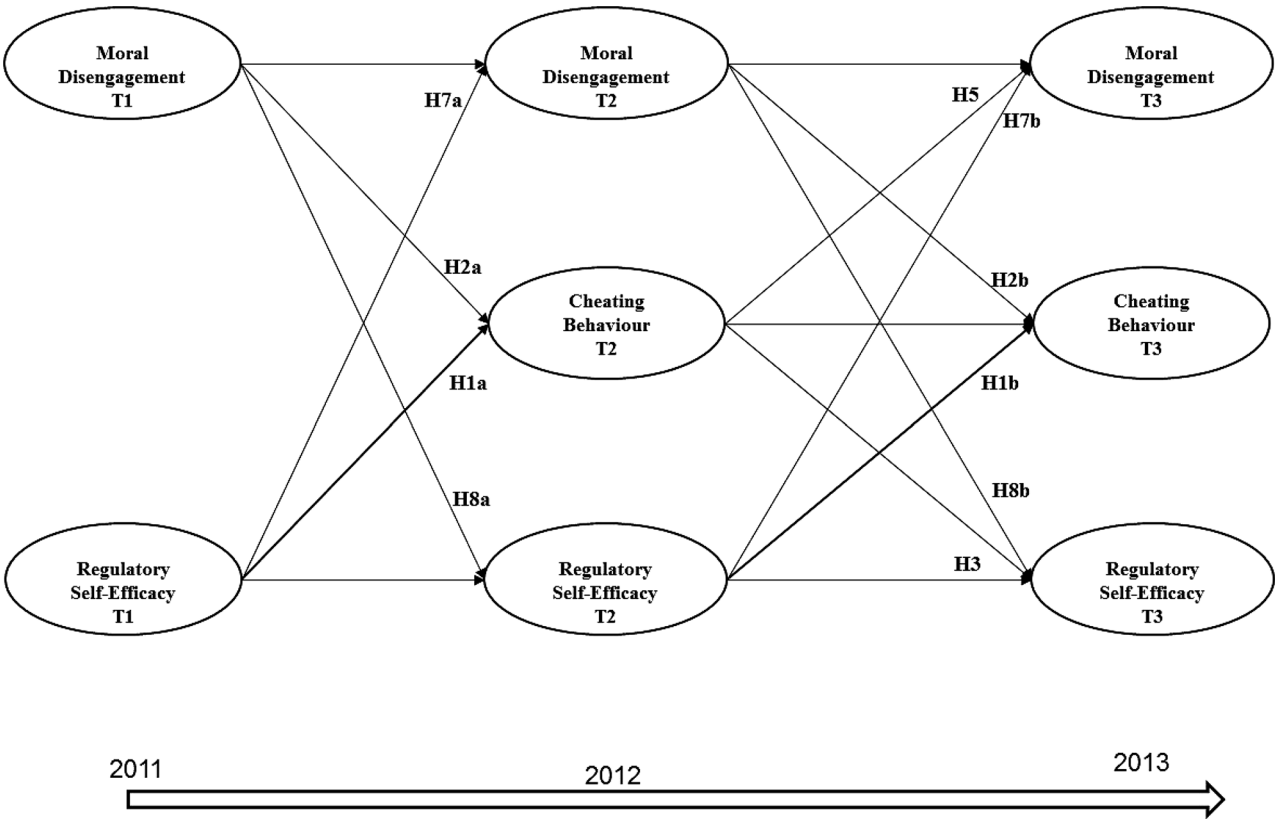

Fig. 1 The posited model

over time, controlling for individuals' previous levels in these dimensions (see Fig. 1). Furthermore, while the role of behaviour as a source of self-efficacy beliefs has been vastly corroborated, only a few studies have examined the role of behaviour in reinforcing justification mechanisms. In addition, the role of behaviour in influencing the different dimensions of the moral self-regulatory system has been overlooked. Hence, our research will shed some light on how self-efficacy beliefs, which may inhibit transgressive conduct, may reinforce moral control, making the activation of MD more difficult. Similarly, we will better understand how MD, which may foster transgressive conduct, may weaken moral control, reducing the beliefs people may have about their capability of regulating their conduct and resisting peer pressure. Finally, a further added value of this study is the investigation of the role of these two variables related to moral processes in relation to cheating behaviour, which has been underestimated in the literature on academic dishonesty. However, the examination of MD is particularly relevant in line with Murdock and Anderman (2006), who stated that 'academic cheating, like other deviant behaviours, is empirically related to students' neutralising or explaining away the wrongness of the behaviour' (p. 137). In addition, the examination of R-SE is also relevant in accordance with Bandura, who suggested that self-regulation based on internal rather than legal and social control is pivotal since 'a civil society is largely a self-governing one' (2016, p. 5). Indeed, academic institutions have the responsibility of placing well-prepared individuals into the labour market, not only in terms of technical skills and knowledge but also in terms of ethical competencies. Because higher education represents a critical stage for the moral development of future workers (McCabe et al. 2012) during which moral agency can still be improved (Colby et al. 1983; Rest 1988; Treviño and Nelson 2011), the results of this study may provide useful insight by increasing knowledge regarding the interplay between unethical conduct and self-regulatory dimensions that may either suppress or foster transgressions.

Academic Cheating Behaviour

Academic cheating behaviour can take different forms, such as plagiarism, unauthorised collaboration on an assignment, using crib notes, copying from a colleague during a test, or intentionally facilitating cheating by others. A review published by Whitley (1998) showed that in 46 empirical studies, the prevalence of cheating ranged from 9 to 95%, with a mean of 70.4%. Moreover, surveys conducted between autumn 2002 and spring 2015 by

Donald McCabe and the International Center for Academic Integrity (ICAI) showed that 39% of undergraduates (of a total of 71,300 respondents) admitted to cheating on tests and 62% admitted to cheating on written assignments (ICAI 2015). Cheating behaviour has been investigated in a wide range of higher education programmes (see Krueger 2014). Particular attention has been given to business, medical, and nursing students due to the associated potential effect on their future professional roles if their misbehaviour becomes 'habitual'.

In the present study, we focus on nursing students because their potential academic misconduct may have repercussions in the healthcare system early in their clinical training (Park et al. 2013). Indeed, a cheating student, who passed previous exams using dishonest shortcuts, would be considered by clinical supervisors as equally prepared as any other honest student, and this may lead to possible risks for patients' health and quality of care. Although 'a strong sense of personal ethics is an expectation of all nursing students' (McCrink 2010, p. 653; McCabe 2009) reported that undergraduate nursing students do not differ significantly from other students, which is a finding 'of concern to a profession where human life depends, at least occasionally, on the ability of nurses to effectively perform their job' (2009, p. 616).

The Social-Cognitive Perspective on Transgressive Behaviour

In his social-cognitive theory, Bandura (1986) described the nature and function of morality within the broader framework of human agency. Specifically, Bandura recognised individuals as active agents, who are able to exercise their intentional influence over their own functioning and over the course of the events by their actions. Self-regulatory processes, which allow people to control and modulate their behaviour, are paramount for the exercise of human agency (Bandura 2001).

Within this theoretical framework, moral agency is exercised through self-regulatory processes that allow individuals to regulate their behaviour according to their ethical and moral norms defined and shared within their social system. Bandura (2016) clarified that these self-regulatory processes may assume two forms: (a) a proactive one that fosters the engagement in behaviour consistent with moral principles and standards that result in positive self-evaluative reactions, such as pride and satisfaction and (b) an inhibitive one that hinders the engagement in morally and socially sanctionable behaviour that brings negative self-evaluative reactions, such as blame and self-condemnation. Hence, in relation to the exercise of morality, the self-regulatory processes operate to keep individuals' conduct within the boundaries of their social and moral norms on one hand and to suppress engagement in 'out of the rule' behaviour on the other hand.

In the exercise of moral agency, self-regulatory processes are rooted in the beliefs individuals have about their perceived level of control over their moral behaviour (Bandura 2001, 2016). Moreover, R-SE informs the level of inhibitory control that people have on transgressive and deviant behaviour when this type of conduct may be promoted and/or easily accessible. The protective role of this cognitive dimension in preventing and hindering transgressive behaviour has been empirically attested (e.g., Bandura et al. 1996, 2001; Caprara et al. 2002; Cattelino et al. 2014; d'Arripe-Longueville et al. 2010; Newton et al. 2012). However, R-SE has not been previously examined in relation to cheating behaviour, a form of deviant conduct that is instrumental, common, and, in some cases, even approved and promoted by peers. Drawing on existing literature, we expected that the perceived capability to resist deviant peer pressure hinders the engagement in cheating behaviour. Hence, we stated the following hypotheses:

Hypothesis 1a R-SE at Time 1 will negatively influence cheating behaviour at Time 2;

Hypothesis 1b R-SE at Time 2 will negatively influence cheating behaviour at Time 3, controlling for both cheating behaviour and MD at Time 2.

Within the moral agency theory, Bandura depicted not only the process leading individuals to behave in line with their moral standards but also the process allowing them to deactivate or weaken the moral control (1991, 2016). According to Bandura, transgressive conduct cannot be considered 'ethical lapses' (2016, p. 48) but the result of the activation of MD, a set of social-cognitive mechanisms creating the conditions for 'persuasive self-exonerations' (2016, p. 48). Specifically, MD represents the other side of the self-regulatory process that makes it possible to misbehave while avoiding the activation of moral control. Moreover, MD allows 'otherwise good people' to temporarily and selectively silence the internal moral system and engage in a behaviour that they would generally consider wrong without incurring any self-censure (Bandura 1991, 2016). More specifically, MD intervenes in the translation of thought into action by removing the restraints on transgressive conduct and the associated condemnatory self-reactions (Bandura 2016).

Moral disengagement operates through eight mechanisms at four sites of the self-regulatory process that allow individuals to perceive transgressive and deviant conduct as morally acceptable and as an appropriate means to pursue their own goals (Bandura 1991, 2016). A set of mechanisms operate at the behavioural locus, converting

wrongdoing into acceptable action. Specifically, moral justification results in the 'sanctification' of misconduct by re-construing the misbehaviour as serving higher moral and ethical principles. In addition, through euphemistic labelling, individuals 'sanitise' the wrongdoing by describing it using a mild and masking language. Through advantageous comparison, individuals reduce the wrongness of their misbehaviour by comparing it with more flagrant and incontrovertible misconduct. Another set of mechanisms operate at the agency locus, obscuring individual responsibility in relation to the misconduct. In particular, through displacement of responsibility, individuals exonerate themselves for misacting considered to be dictated by authorities. Similarly, through the diffusion of responsibility, individuals exonerate themselves by considering the misbehaviour a common practice enacted by the social group. A third set of mechanisms operate at the outcome locus, altering or hiding the actual consequences of the misconduct. In particular, through disregarding and distortion of consequences, the effect produced by misconduct is reduced, reframed, or removed. Finally, a set of mechanisms operate at the victim locus. Through dehumanisation, individuals divest victims from human characteristics or attribute subhuman qualities to them. In addition, through attribution of blame, victims are considered responsible for what they suffered and do not have anyone else to blame but themselves.

Overall, MD has been studied in relation to different types of behaviour, and results have consistently attested to its role in fostering deviant and transgressive conduct (e.g., Gini et al. 2014; Shulman et al. 2011) and hindering prosocial and helping behaviour (e.g., Bandura et al. 1996; Paciello et al. 2013). Accordingly, we anticipate that the more individuals deactivate their internal moral system, the more likely their engagement in behaviour will not be in line with their internal moral system and social norms. Hence, in line with the existing literature, we hypothesised that:

Hypothesis 2a MD at Time 1 will positively influence cheating behaviour at Time 2;

Hypothesis 2b MD at Time 2 will positively influence cheating behaviour at Time 3, controlling for both cheating behaviour and R-SE at Time 2.

As suggested by Bandura (2016) MD 'is not a dispositional trait' (p. 26) and, accordingly, several authors have investigated the different factors that may promote or hinder the propensity to morally disengage. Specifically, studies have shown that moral identity, empathy, and self-efficacy among others negatively influence it (e.g., Bandura et al. 2001; Deter et al. 2008; Hyde et al. 2010; Moore et al. 2012). On the contrary, dimensions such as psychological distress, negative emotions, insecurity, and peer exclusion positively influence MD (e.g., Bao et al. 2015; Fida et al. 2015: Fontaine et al. 2014; Newton et al. 2012; Paciello, Fida, Cerniglia, Tramontano, & Cole, 2013). Furthermore, this conceptualisation of MD is also in line with the literature about its development highlighting that, although MD for some individuals tends to be stable across time (Paciello et al. 2008), in the general population this stability is on average moderate. In addition, the definition of MD as a process variable rather than a dispositional trait (such as for example Big Five, McCrae and Costa 1987) is also mirrored in the way it is measured. Indeed, similarly to SE, Bandura recommended to assess MD in relation to the specific realm of life under study. In line with this, several scales have been developed to measure MD in relation for instance to civic and minor transgression (e.g., Caprara et al. 2009), sport misbehaviour (e.g., Boardley and Kavussanu 2007, 2008), and counterproductive work behaviour (e.g., Fida et al. 2015). Based on these premises, it is likely that if on the one hand, as suggested by an anonymous reviewer, morally disengaging in the past provides further encouragement for morally disengaging in the present or future, on the other hand this stability does not rule out intra-individual variability in, and the influence of individual and contextual factors on MD over time. However, it must be acknowledged that in some studies MD has been conceived as a dispositional trait (e.g., Samnani et al. 2014).

In line with this, according to the social-cognitive theory (Bandura 1986), when studying human conduct, it is necessary to consider the effects that behaviour has on the individual cognitive system. Hence, limiting the analysis to the effect that individual characteristics have on behaviour without considering the reciprocal influence would only provide a partial understanding. This is also in line with the self-perception theory (Bem 1972), which posits a direct influence of behaviour on personal beliefs, attitudes, and, more generally, cognitive processes. Indeed, as individuals infer others' attitudes and beliefs by observing their behaviour, they also infer their own attitudes and beliefs by observing their own conduct (Bem 1972). Furthermore, cognitions deriving from this internal self-inferential process reinforce the engagement in the same behaviour over time, strengthening the association between cognition and behaviour (Albarracin and Wyer 2000; Glasman and Albarracín 2006).

In line with this, Bandura (1997) underlined that actual behaviour is a key element influencing self-efficacy beliefs. However, at least in relation to R-SE, while the previously mentioned studies provide evidence for the influence of R-SE on behaviour, to the best of our knowledge, there are no longitudinal studies empirically testing neither the

opposite relationship nor the reciprocal influence. Hence, it is plausible to hypothesise that the experience of moral control failure would weaken the beliefs people have about their capabilities to resist internal and peer pressure to misbehave. Following this, we expected that:

Hypothesis 3 Cheating behaviour at Time 2 will negatively influence R-SE at Time 3, controlling for prior levels of both R-SE and MD;

Hypothesis 4 R-SE at Time 1 will positively affect indirectly R-SE at Time 3 through the influence exerted on cheating behaviour at Time 2.

Similar hypotheses were posited on the reciprocal influence between cheating behaviour and MD. Overall, this reciprocal path has been generally overlooked, although there is some evidence supporting it, such as the study conducted by Shu et al. (2011) finding that MD is a 'behavioural consequence' of cheating. In addition, Fontaine et al. (2014) found that aggressive behaviour in middle adolescence influences MD in late adolescence and in turn influences criminal behaviour in early adulthood. Hence, we expected that the engagement in deviant behaviour will reinforce the same mechanisms initially used to legitimise and justify it. This vicious circle between misbehaviour and MD weakens the moral control system and may lead in turn to a sort of 'moral desensitisation'. In other words, by repeatedly misbehaving, people become gradually more tolerant towards discomfort and self-condemnation associated with the misconduct itself (Bandura 1986, 2016) 'until eventually acts originally regarded as abhorrent can be performed without much distress' (Bandura 1986, p. 385). Hence, we hypothesised that:

Hypothesis 5 Cheating behaviour at Time 2 will positively influence MD at Time 3, controlling for prior levels of both MD and R-SE;

Hypothesis 6 MD at Time 1 will positively affect indirectly MD at Time 3 through the influence exerted on cheating behaviour at Time 2.

Furthermore, considering that (a) R-SE attests for the good functioning of moral self-regulation and a consistent actualisation of moral thoughts into behaviour, and (b) MD attests for the failure of moral self-regulation and a divorce between thoughts and action, it is likely that they hinder each other over time. However, no previous studies have specifically tested their reciprocal relationships, although there is some evidence suggesting the influence of R-SE on MD (Bandura et al. 2001). Nevertheless, we hypothesised that:

Hypothesis 7a R-SE at Time 1 will negatively affect MD at Time 2, controlling for MD at Time 1;

Hypothesis 7b R-SE at Time 2 will negatively affect MD at Time 3, controlling for both MD and cheating behaviour at Time 2;

Hypothesis 8a MD at Time 1 will negatively affect R-SE at Time 2, controlling for R-SE at Time 1;

Hypothesis 8b MD at Time 2 will negatively affect R-SE at Time 3, controlling for both R-SE and cheating behaviour at Time 2.

Finally, still in line with the reciprocal influence between cognition and behaviour, we consider that the reciprocal influence between R-SE and MD is not only direct but also indirect through the mediation of behaviour. Specifically, considering cheating behaviour an experience of moral failure, we hypothesised that:

Hypothesis 9 R-SE at Time 1 will negatively affect MD at Time 3 through its effect on cheating behaviour at Time 2;

Hypothesis 10 MD at Time 1 will negatively affect R-SE at Time 3 through its effect on cheating behaviour at Time 2.

Method

Participants

This study is part of an ongoing longitudinal project conducted in 18 schools of nursing that began in 2011. The project was designed to investigate the main determinants of students' adjustment versus maladjustment during their vocational education. An important component of the study is examining social-cognitive variables that are conducive to the emergence and maintenance of cheating behaviours.

This longitudinal project followed a staggered, two-cohort design. The data for the present study were derived from the cohort of students enrolled in the first year of their bachelor's degree in 2011 (henceforth T1) and include assessments one (2012, T2) and two (2013, T3) years later. The sample includes 866 students at T1 (62.8% females, $M_{age} = 21.8$, $SD_{age} = 4.7$), 530 at T2 (70.2% females, $M_{age} = 22.6$, $SD_{age} = 4.5$), and 505 at T3 (69.7% females, $M_{age} = 23.4$, $SD_{age} = 4.4$). The percentage of participants who dropped out from T1 to T2 was 42.5% of the T1 sample, from T2 to T3 was 27.1% of the T2 sample, and from T1 to T3 was 46.9% of the T1 sample.

Procedure

Questionnaires were administered annually at the beginning of each academic year (T1: November 2011, T2:

November 2012, and T3: November 2013). The students were administered the questionnaire in their classrooms by a member of the research team and were asked to complete it individually. A detailed protocol was developed in order to standardise the procedure as much as possible across the nursing schools. The procedures and informed consent were approved beforehand by the university the ethics review board. The questionnaire administration procedure was previously planned within each nursing school in agreement with its managerial board. Specifically, after inviting the lecturer to leave the class, a member of the research team introduced students to the general aim and the longitudinal nature of the project. The research team member also clarified that participation was on a voluntary basis that the research was not commissioned by the university they were enrolled in, and that students were free to withdraw at any time. Due to the longitudinal nature of the project, students were required to indicate their name or an *alias* in order to allow matching the questionnaires across waves. However, the research team member reassured students that individual data would not be shared with anyone for any reason and that during data entry a unique code would be assigned to each student in order to anonymise the data file. The file containing information associating names and unique codes was accessible only to principal investigators. In addition, to further guarantee the confidentiality of the responses, students were informed that data would always be reported in aggregate form. Students first signed the informed consent form, then completed the pencil-and-paper questionnaire, and finally returned it in a white anonymous envelope. Student participation was rewarded, if they opted so, by a brief tailored personality profile discussed in a brief individual meeting with a registered psychologist.

Measures

Regulatory self-efficacy was assessed from T1 to T3 by four items adapted from the R-SE scale developed by Bandura et al. (2001). Students were asked to report using a five-point format scale (from 1 = *not capable at all* to 5 = *completely capable*) their perceived capability in relation to each statement. This scale measures the students' regulatory beliefs to resist peer and individual pressure in engaging in deviant behaviours. The full set of reliability coefficients of R-SE measured at each time point are presented in Table 1.

Moral disengagement was assessed from T1 to T3 by 12 items of the academic MD scale developed by Farnese et al. (2011). This scale measures students' proneness to morally disengage in relation to different forms of academic cheating behaviours. Response options were presented in a five-point format, ranging from 1 = *agree not at all* to 5 = *completely agree*. The full set of reliability coefficients of MD measured at each time point are presented in Table 1.

Cheating behaviour was assessed at T2 and T3 by five items that measure the frequency of different types of academic cheating behaviour. Specifically, students were asked to report the frequency they engaged in each of the listed cheating behaviours using a five-point format scale (from 1 = *never* to 5 = *always*). The full set of reliability coefficients of cheating behaviours measured at each time point are presented in Table 1. Clearly, since the scale refers to cheating behaviour within the academic context, it was not administered at T1 when students had just entered vocational education.

The list of the items used for the present study is available in Appendix 1 as supplementary materials.

Data Analysis

Attrition and missing data were analysed using a multifaceted approach. Since longitudinal data are generally affected by a combination of both missing completely at random (MCAR) and missing at random (MAR) mechanisms (Little 2013), we first performed Little's MCAR test on the set of variables selected for the present study (1988) to verify whether 'missing' was unrelated to our study variables. We further carried out a series of analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), and Chi square tests to detect differences between students who dropped out across adjacent points and from T1 to T3 and those who did not, in relation to sample characteristics and study variables (Tabachnick and Fidell 2007). In addition, Box's *M* test was used to assess the homogeneity of covariance matrices between subjects that dropped out (or did not drop out) of the project across adjacent waves and from T1 to T3.

Since students were nested in different nursing schools, intraclass correlation coefficients (ICC) relating to the study variables were computed to assess the need for multilevel modelling. Moreover, ICCs lower than .10 suggest that contextual effects are trivial (Hox 2010) so the nested structure of the data can be disregarded.

Descriptive statistics (means, standard deviations, skewness, and kurtosis indices for all study variables) were examined. Composite reliability (CR) and maximal reliability (MR), coefficients, less biased than Cronbach's alpha (Sijtsma 2009), were used for measuring internal coherence. Overall, values approaching 1.00 indicate a good reliability of the scales (Raykov and Marcoulides 2011). Finally, correlations among the study variables were investigated.

The latent cross-lagged model shown in Fig. 1 was examined by means of structural equation modelling

Table 1 Descriptive statistics, reliability coefficients, and correlations among study variables

		M	SD	SKEW	KURT	α	CR	MR	1	2	3	4	5	6	7	8	9
1	Gender	–	–	–	–	–	–	–	–								
2	Age T1	21.85	4.70	–	–	–	–	–	−.07**	–							
3	MD T1	2.24	0.68	.59	.42	.83	.83	.82	−.13**	−.17**	–						
4	MD T2	2.30	0.78	.35	−.40	.88	.88	.87	−.16**	−.13**	.51**	–					
5	MD T3	2.26	0.79	.38	−.25	.79	.89	.88	−.21**	−.09ns	.46**	.52**	–				
6	CHEAT T2	2.36	0.84	.51	−.12	.89	.76	.84	−.02ns	−.22**	.35**	.46**	.40**	–			
7	CHEAT T3	2.43	0.83	.49	−.17	.81	.79	.82	.05ns	−.15**	.35**	.35**	.41**	.48**	–		
8	R−SE T1	4.08	0.71	−.78	.33	.67	.68	.73	.14**	.07ns	−.25**	−.30**	−.20**	−.25**	−.27**	–	
9	R-SE T2	4.05	0.75	−.62	.23	.72	.74	.79	.08ns	.11**	−.24**	−.30**	−.15**	−.27**	−.26**	.44**	–
10	R-SE T3	4.01	0.73	−.71	.21	.74	.77	.88	.11**	.14**	−.18**	−.18**	−.26**	−.24**	−.29**	.37**	.41**

Gender was coded as follows: *0* Male, *1* female, *T1* time 1, *T2* time 2, *T3* time 3, *MD* academic moral disengagement, *CHEAT* academic cheating behaviours, *R-SE* regulatory self-efficacy, *M* mean, *SD* standard deviation, *SKEW* skewness, *KURT* kurtosis, α cronbach's alpha, *CR* composite reliability, *MR* maximal reliability. CR and MR coefficients are based on maximum likelihood standardised estimates of factor loadings. * $p < 0.05$; ** $p < 0.01$, *NS* not significant

(SEM; Bollen 1989) using Mplus 7.4 software. Preliminarily, the construct and longitudinal validity of the study variables were examined using a two-step procedure (Bollen 1989) analysing the longitudinal invariance of each measure and the measurement part of the posited model.

To test the longitudinal invariance of R-SE, MD, and cheating behaviour, we followed Meredith's approach (1993). First, we implemented an unconstrained model (i.e. configural invariance) in which no constraints across time were imposed on any parameter (i.e. the same factor and same patterns of fixed and freed parameters). Then we constrained factor loadings to be equal across waves (i.e. metric invariance); following this, we constrained observed intercepts (i.e. strong invariance) and, as a final step, residual variances (i.e. strict invariance) to be equal across waves. Since these models are nested, we examined the tenability of the imposed constraints by computing both $\Delta\chi^2_{(\Delta df)}$ (Scott-Lennox and Lennox 1995) and ΔCFI tests. A non-significant restricted χ^2 test with $\alpha \geq .01$ and $\Delta CFI < .01$ (Cheung and Rensvold 2002) supports the tenability of the imposed constraints and thus the longitudinal invariance.

Following this, we analysed the measurement part of the model shown in Fig. 1. Latent variables were defined depending on the number of their respective indicators. Since MD was assessed by many items and the construct was confirmed to be one-dimensional, we implemented a partially disaggregated approach in which its latent factor was defined at each time point using parcels (i.e. the sum or the average of several items measuring the construct) (Coffman and MacCallum 2005). Specifically, three parcels were constructed using the 'item-to-construct' balance strategy (Little et al. 2002) by examining the item-to-construct relationships (as represented by factor loadings in the item-level factor analyses). The parcelling scheme was the same for all time points. Since both cheating behaviour and R-SE were assessed by a limited number of items, their corresponding latent variables were defined using items as manifest indicators at each time point. Thus, the final measurement model was a combination of total and partial disaggregation approaches to measurement model specifications (Bagozzi and Heatherton 1994). In line with the multifaceted approach to the model fit (Tanaka 1993), we took several indices and criteria into account: (i) χ^2 test, (ii) comparative fit index (CFI; Bentler 1990), (iii) root mean square error of approximation (RMSEA; Steiger 1990) along with the test of close fit, and (iv) standardised root mean squared residual (SRMR; Hu and Bentler 1999).

After establishing the goodness of the measurement model, we finally tested the hypothesised paths among the latent variables, as shown in Fig. 1. The posited model includes gender and T1 age as covariates as well as

covariances between the residuals of the same observed variables measured adjacently across time (see Little 2013). Finally, to test the hypothesised mediations (H4, H6, H9, and H10), we examined the specific indirect effects by interpreting the associated confidence intervals (CIs; MacKinnon 2008) based on 5000 bootstrap replications of the initial sample and adopting the bias-corrected bootstrap method recommended by Williams and MacKinnon (2008).

Results

Preliminary Results

Attrition and missing data analysis. The results of Little's MCAR test were not significant ($\chi^2_{[108]} = 128.86, p = .08$). Results show that a higher proportion of males ($\chi^2_{[1]} = 12.1$, $p < .01$) and older students ($F_{[1,864]} = 9.57, p < .01$, partial $\eta^2 = .01$) dropped out from T1 to T3. No other significant effects were detected. However, a small significant multivariate effect was detected when considering MD and R-SE at T1 as dependent variables and the categorical variable representing the attrition between T1 and T3 as the MANOVA factor (Wilk's $\Lambda = .991$, $F_{[1,\ 864]} = 4.09$, $p = .017$, partial $\eta^2 = .009$). The analysis of principal effects revealed that students who did not drop out scored slightly higher ($M = 4.14$, SD = .68) than the students who dropped out ($M = 4.01$, SD = .74) in R-SE ($F_{[1,863]} = 8.17$, $p < .01$, partial $\eta^2 = .01$). The results of Box's M test for the homogeneity of covariance between students who dropped out and those who did not were not significant across adjacent waves or from T1 to T3, suggesting no differences in the covariance structure. Overall, the findings suggested a combination of MCAR and MAR missing data mechanisms acting over the variables considered in the present study. Thus, we used a full information maximum likelihood (FIML) parameter estimate method (Arbuckle 1996) to handle missing data in the model. In addition, we included age and gender as covariates.

Intraclass correlations. The ICCs computed for all the study variables ranged from .002 (R-SE at T1) to .070 (cheating behaviour at T3), confirming that contextual effects are marginal (Hox 2010). Consequently, we did not take into account the nested structure of the data.

Descriptive statistics and reliability. The percentage of students reporting that they engaged in cheating behaviour 'at least rarely' ranged from 43.4% (e.g., using someone else's text without referencing it) to 90.8% (e.g., giving hints to classmates during exams) at T2 and from 46.7% (e.g., using someone else's text without referencing it) to 93.6% (e.g., giving hints to classmates during exams) at T3. Descriptive statistics for all items are included in Appendix 2 as supplementary materials.

Table 1 presents the descriptive statistics of the study variables as well as the reliability coefficients and correlations among them. As can be seen, MD, cheating behaviour, and R-SE measures are normally distributed and reliable across waves. Furthermore, MD and cheating behaviour are positively associated, while R-SE was negatively associated with them at each time point. Moreover, all variables were fairly stable across waves. In addition, females scored lower in MD at each time point and higher in R-SE at T1 and T3. Finally, older students scored lower in both MD and cheating behaviours at all time points (with the only exception of MD at T3), and higher in R-SE (except T1).

Longitudinal invariance, cross-lagged model, and indirect effects. As illustrated above, before running the cross-lagged model, we examined the longitudinal invariance of each measure. With regard to the R-SE scale, results show that metric invariance ($\Delta\chi^2(6) = 12.39$, $p = .05$, ΔCFI $< .01$) as well as strong invariance are fully supported ($\Delta\chi^2(6) = 8.29$, $p = .22$, ΔCFI $< .01$). Finally, after releasing equality constraints on a residual variance across waves, partial strict invariance was reached ($\Delta\chi^2(6) = 9.66$, $p = .14$, ΔCFI $< .01$). With regard to the MD scale, results show that metric invariance is fully supported ($\Delta\chi^2(22) = 15.76$, $p = .83$, ΔCFI $= .000$), whereas strong invariance is partially supported after releasing two equality constraints ($\Delta\chi^2(43) = 47.44$, $p = .30$, ΔCFI $< .01$). Finally, strict invariance was reached ($\Delta\chi^2(24) = 36.09$, $p = .05$, ΔCFI $< .01$).

With regard to the cheating behaviour scale, results show that metric invariance is fully supported ($\Delta\chi^2(4) = 9.17$, $p = .06$, ΔCFI $< .01$), whereas strong invariance is partially supported after releasing one equality constraint ($\Delta\chi^2(4) = 12.67$, $p = .02$, ΔCFI $< .01$). Finally, strict invariance was reached ($\Delta\chi^2(5) = 9.85$, $p = .08$, ΔCFI $< .01$).

Given the support of full metric invariance for R-SE, MD, and cheating behaviour measures, we tested the measurement model that resulted in a good fit: $\chi^2(387) = 666.211$, $p < .01$, CFI = .96, RMSEA = .028 (90% CI .024–.031, $p = 1.00$), SRMR = .05, with loadings ranging from .45 to .91. Following this, we tested the posited latent cross-lagged model, also including the two covariates. The model yielded a good fit: $\chi^2(439) = 790.24$, $p < .01$, CFI = .95, RMSEA = .030 (90% CI .026–.033, $p = 1.00$), SRMR = .053. Results of this last model are presented in Fig. 2. Overall, all variables showed significant and strong autoregressive paths across time points, suggesting that R-SE, MD, and cheating behaviour were fairly stable across waves.

In line with Hypotheses 1a and 1b, R-SE at T1 and T2 influence negatively cheating behaviour one year later. Similarly, in line with Hypotheses 2a and 2b, MD at T1 and T2 positively influence cheating behaviour one year later. Hence, the opposite influence that R-SE and MD exerted on cheating behaviour over time is confirmed.

In addition, contrary to our expectation, cheating behaviour at T2 did not influence R-SE at T3 (Hypothesis 3). Consistently, results of the indirect effect (Table 2) showed that R-SE at T1 did not affect R-SE at T3 through cheating behaviour at T2 (Hypothesis 4). Hence, findings showed that while R-SE influenced cheating behaviour, the reciprocal relationship was not supported.

Furthermore, results of the cross-lagged model confirmed the positive influence cheating behaviour at T2 had on MD at T3 (Hypothesis 5). Consistently, results of the indirect effect (Table 2) confirmed that MD at T1 positively affected MD at T3 through cheating behaviour at T2 (Hypothesis 6). Hence, findings supported the role of cheating behaviour in reinforcing the recourse to MD over time.

The findings on the hypotheses regarding the reciprocal relationships between R-SE and MD are mixed. Indeed, R-SE negatively influenced MD from T1 to T2 (Hypothesis 7a) but not from T2 to T3 (Hypothesis 7b). In addition, MD did not exert any significant influence on R-SE neither from T1 to T2 (Hypothesis 8a) nor from T2 to T3 (Hypothesis 8b). Consistent with these results, the indirect effect test (Table 2) confirmed the role of cheating behaviour at T2 in mediating the negative relationship between R-SE at T1 and MD at T3 (Hypothesis 9), but not the negative relationship between MD at T1 and R-SE at T3 (Hypothesis 10). Hence, results partially confirmed the interplay between self-regulatory dimensions of the moral system and behaviour over time.

Regarding the role of covariates, the results showed that females scored lower in MD at T1 and T3 (in both cases, $\beta = -.13$) and higher in R-SE at T1 ($\beta = .18$) and T3 ($\beta = .13$). Finally, older students scored lower in MD at T1 ($\beta = -.22$), cheating behaviour at T2 ($\beta = -.16$), and higher R-SE at T1 ($\beta = .10$).

Overall, the model explained 38% of the variance of MD, 26% of cheating behaviour, and 35% of R-SE measured at T2, and 40% of MD, 37% of cheating behaviour, and 32% of R-SE measured at T3.

Discussion

Ethics in the workplace are paramount for organisations worldwide (Treviño and Nelson 2011). The literature on the factors promoting or hindering workplace ethics has underlined the importance of investigating the processes leading individuals to misbehave early in their vocational education (McCabe et al. 2012; Treviño and Nelson 2011). Drawing on social-cognitive theory, in this study, we

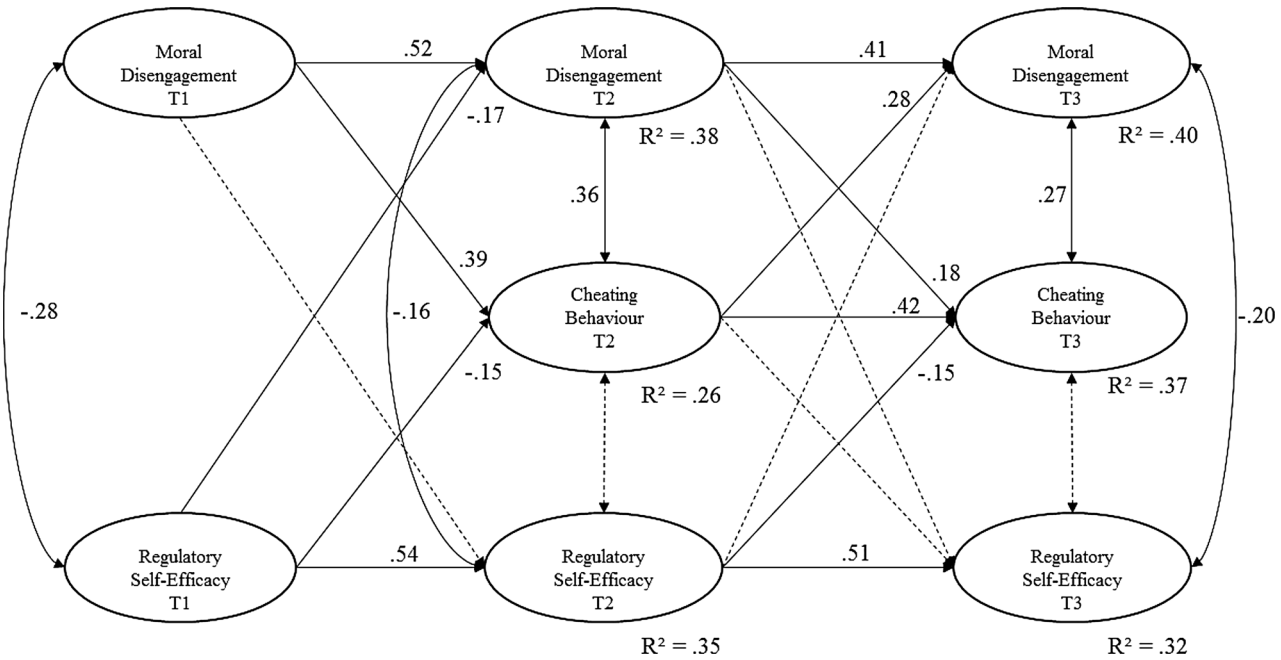

Fig. 2 Results from the latent cross-lagged model. *Note* Latent variables were defined by items in the case of cheating behaviour and regulatory self-efficacy, and by parcels for moral disengagement. Gender and age were included in the model but they are not represented in the figure for the sake of clarity. Results of the effects of covariates are described in the text. *Dotted lines* indicate relationships that were not statistically significant

Table 2 Hypothesised specific indirect effects and associated bootstrapped confidence intervals of the cross-lagged model

Specific Indirect Effects		Estimate	95% Bootstrapped CI
Hp4	R-SE(T1) → CHEAT(T2) → R-SE (T3)	.017	−.012 to .066
Hp6	MD(T1) → CHEAT(T2) → MD(T3)	**.108**	.032 to .205
Hp9	R-SE(T1) → CHEAT(T2) → MD(T3)	**−.043**	−.093 to −.003
Hp10	MD(T1) → CHEAT(T2) → R-SE(T3)	−.044	−.126 to .038

Results are completely standardised. Significant estimates are in bold. *CI* confidence interval; *Hp* hypothesis, *T1* time 1, *T2* time 2, *T3* time 3, *R-SE* regulatory self-efficacy, *CHEAT* academic cheating behaviours, *MD* academic moral disengagement

considered two dimensions of the self-regulatory moral system, R-SE and MD, which operate in opposite directions. While the former hinders, the latter promotes the engagement in misbehaviour. More specifically, the present study has been designed to investigate the role of R-SE and MD in influencing cheating behaviour over time. Regulatory self-efficacy represents the beliefs individuals have about their capabilities to resist internal and peer pressures, while MD represents a set of justification mechanisms which allows students to reframe the unethical nature of cheating behaviour, making it a viable option. Overall, the results of the present study clarified the social-cognitive processes that may lead to the prevention of unethical conduct or to its normalisation.

Our findings confirmed that those students with higher R-SE engage to a lesser extent in cheating behaviour (Hypotheses 1a and 1b). This result attested to the role of R-SE as a protective factor hindering morally and socially sanctionable conduct through the exercise of an inhibitory form of moral control. Specifically, those who perceived themselves as able to morally self-regulate their conduct, even in tempting situations or in the presence of peer pressure, reported less frequent misconduct. In addition, our findings also confirmed that those with higher MD engaged to a greater extent in cheating behaviour (Hypotheses 2a and 2b). Hence, students who are more prone to morally disengage report more frequent engagement in cheating behaviour one year later, both from T1 to T2, and from T2 to T3. These results attested the role of MD as a mechanism silencing moral control. Specifically, MD may allow students to 'normalise' cheating behaviours from the very beginning of their academic education and consider them both to be acceptable and suitable for pursuing personal goals.

In addition, in line with both social-cognitive (Bandura 1986) and self-perception (Bem 1972) theories, in this study, we examined the interplay between R-SE, MD, and cheating behaviour during vocational education from a longitudinal perspective. Hence, we investigated not only the influence of social-cognitive dimensions of the self-regulatory process on behaviour but also their reciprocal relationships over time. Overall, the findings partially confirmed our hypotheses with the reciprocal relationships standing for MD but not for R-SE.

In line with our expectations, the results of the cross-lagged model confirmed that cheating behaviour influenced (Hypothesis 5) and sustained (Hypothesis 6) MD over time. Findings showed that MD not only affected cheating behaviour over time but was also influenced by it. In addition, results of the indirect effects confirmed that MD at the last year of vocational education was influenced by MD at the beginning of the academic path through cheating behaviour assessed at the beginning of the second year, above and beyond prior levels of MD. These results suggested that the engagement in cheating behaviour may foster a kind of 'moral desensitisation' making MD more accessible. Specifically, it is likely that wrongdoing over time may make the misconduct itself more tolerable and acceptable, and may reduce the discomfort associated with it. In other words, engaging in cheating behaviour contributes to strengthening the cognitive mechanisms that initially trigger and sustain it.

Contrary to our expectations, the engagement in cheating behaviour neither influenced (Hypothesis 3) nor sustained (Hypothesis 4) R-SE over time. Findings showed that the engagement in misconduct does not undermine the set of beliefs aimed to inhibit it. This may be explained by considering the behavioural outcome assessed in this study. Although Bandura (1997) underlined how failure experiences may undermine self-efficacy beliefs, he primarily highlighted that mastery experiences are the strongest antecedents of self-efficacy beliefs. Hence, it is likely that the behaviours influencing R-SE and strengthening it over time would be those related to virtuous academic conduct, attesting to successful experiences in resisting tempting situations and peer pressure to engage in misconduct.

Furthermore, this longitudinal study allowed the examination of the reciprocal influence between R-SE and MD, and their interplay with cheating behaviour over time. Our findings partially supported our hypotheses. Specifically, while R-SE directly influenced MD only from Time 1 to Time 2 (Hypothesis 7a) but not from Time 2 to Time 3 (Hypothesis 7b), it indirectly influenced MD at Time 3 through cheating behaviour at Time 2 (Hypothesis 9). In

addition, results showed that, in contrast, MD did not influence R-SE directly (Hypotheses 8a and 8b) or indirectly (Hypothesis 10).

Overall, these findings attested that R-SE negatively influences not only the engagement in misconduct but also the justification mechanisms that allow the divorce between moral standards and action. More specifically, this protective role of R-SE is exerted both directly and indirectly through its hindering effect on cheating behaviour. Those students who entered their academic training with higher levels of R-SE were less prone to morally disengage one year later, showing more negative attitudes towards moral justification excuses. This result provides longitudinal support for previous cross-sectional findings (Bandura et al. 2001). However, this effect was not further confirmed when examining the relationship between R-SE and MD one year later (from Time 2 to Time 3). This unexpected finding could be explained by considering the differences between regression equations from Time 1 to Time 2 and from Time 2 to Time 3. Indeed, in the latter case, contrary to the former, cheating behaviour was included in the equation as an additional independent variable. Hence, it is plausible to hypothesise that the influence of R-SE on MD may be fully mediated by the behaviour people engage in, as attested by the significant results of the indirect effects of the relationship between R-SE at Time 1 and MD at Time 3. Indeed, it is by not engaging in misbehaviour due to R-SE that individuals strengthen the moral control and do not morally disengage. This possible explanation is also in line with the self-perception theory suggesting the pivotal role of actual behaviour in influencing the individual self (Bem 1972). However, future studies should examine a full cross-lagged model to further explore this hypothesis.

Finally, regarding the influence of MD on R-SE, results showed that individuals prone to morally disengage do not perceive themselves as less able to resist temptations and peer pressure. This finding may suggest that MD by deactivating individual's moral system preserves the image individuals have about themselves. Hence, in line with Bandura (2016), when people morally disengage, they do not undermine the perception of their capability of keeping their moral control over time.

Theoretical Implications

Our study, drawing on social-cognitive theory (Bandura 1986), empirically investigated for the first time in literature the reciprocal relationship between two opposite dimensions of the self-regulatory moral system. As previously underlined, the great majority of studies have investigated the role of R-SE and MD separately as proximal predictors of deviant conduct or as mediators between individual antecedents and outcomes and have generally neglected their interplay over time in influencing misbehaviour. Indeed, this study makes a relevant contribution to the literature by providing evidence about the opposite influence these two dimensions of the moral self-regulatory system have on transgressive behaviour.

Furthermore, an additional value of this study is the investigation of the influence that behaviour has on cognition over time as well as their interplay, which are relationships generally overlooked in the literature. Specifically, we examined the interplay between cognitive dimensions and behaviour rather than the investigation of which factor is the cause and which is the effect. Testing a longitudinal cross-lagged model enabled the examination of the bidirectional relationships among R-SE, MD, and unethical conduct. This type of model, as suggested by Gini et al. in a recent meta-analysis on MD and aggressive behaviour, should be considered 'the rule instead of the exception' (2014, p. 65). Unfortunately, the limited availability of longitudinal data oftentimes precludes the possibility of appreciating the interplay between dimensions of the self-regulatory moral system and unethical conduct and of understanding the processes that may hinder or foster misbehaviour.

In addition, this study also contributes to the debate on MD as 'trait-' or as 'state-' like dimension. Indeed, results of this longitudinal study showed that although MD is moderately stable across time, so students who were more prone to morally disengage in the past are also more prone to morally disengage in the present and future, it is also influenced to some extent by other cognitive processes (i.e. R-SE) and by the behaviour students engaged in (i.e. cheating behaviour).

Finally, the implemented model provides a significant contribution to the literature on social-cognitive theory by attesting that R-SE not only hinders the engagement in misconduct but also makes those mechanisms that would otherwise facilitate misbehaviour less accessible. Overall, results of this study highlight the protective role of R-SE over individual's behaviour and moral control.

Practical Implications

The results of this study have some practical implications. Specifically, assessing and monitoring students' MD and R-SE at the beginning of their vocational education would allow the educational system to gauge students' general level of leniency and indulgence towards unethical academic conduct and anticipate their proneness to adhere to norms and behavioural codes. In fact, proneness to cheating during this stage could shape ethical conduct in future professional roles (e.g., Harding et al. 2004; LaDuke 2013; McCabe et al. 2012; Nonis and Swift 2001; Wowra 2007).

Although academic cheating behaviour is always alarming, it represents a major concern in some contexts. For example, within nursing vocational education, students' misconduct may potentially affect the healthcare system in which they are placed for clinical training (Park et al. 2013).

In line with Treviño and Nelson (2011), who suggested that ethics can be taught and that unethical behaviour is not just the result of bad character, academic institutions should include a component aimed at promoting moral agency and self-regulatory moral competences in their training in order to promote and enhance R-SE and to reverse or reduce MD. Indeed, this study underlined the role of moral self-regulatory processes in preventing both cheating behaviour and the development of a mindset in which this type of behaviour can be legitimised. To prevent students' misconduct and to promote academic paths ethically connoted, it is important to identify strategies aimed to develop self-regulatory moral competencies and thus design specific trainings accordingly. These trainings should be designed to allow students to integrate moral principles and standards in their moral system, to help them to learn how to keep their conduct in line with their moral system, especially when deviant pressures would make this particularly challenging, and in general to 'build up' the ethical leaders of the future. Thus, during education, a set of norms and rules needs to be integrated into the internal moral control system and become salient in order to be effective. This is useful if individuals are expected to recall those norms and rules and avoid silencing them, particularly in tempting situations when their self-interests are at stake. In summary, placing individuals in the labour market who are able to deal with ethical issues and lead others in an ethical direction is one of the responsibilities of educational institutions (Treviño and Nelson 2011). Our findings can be particularly relevant within the nursing context, where students are required to meet and be involved with patients from the beginning of their academic careers. A lenient mindset in relation to unethical conduct can have a critical effect on students' approach to the profession as well as their ability to provide adequate care to patients (Arhin and Jones 2009; Park et al. 2013).

Limitations and Future Directions

To gain a more comprehensive understanding of the complexity of the reciprocal relationships among R-SE, MD, and cheating behaviour, future research should seek to overcome some of the limitations of the present study. In particular, future research should integrate social and contextual variables, such as the role of peers, lecturers, and supervisors, and the role of culture and norms in the posited model. As suggested in the literature, peers' unethical behaviour may be particularly relevant in fostering engagement in 'outside the rules' behaviour (e.g., McCabe and Treviño 1993; O'Fallon and Butterfield 2012) so that deviant peers may become unethical models (e.g., Vitaro et al. 2000). However, this limit was to some extent counterbalanced by the inclusion in our model of R-SE that informs us about students' perceived capability to resist temptations and peer pressure. Furthermore, social context can also exert a positive effect on individuals' conduct and moral reasoning. Indeed, in line with the literature on ethical leadership (Brown and Treviño 2006), lecturers and supervisors can shape an ethical education culture by conveying the importance of ethical conduct through their attitudes, communication, and behaviour. Similarly, future studies should further investigate the factors that may influence moral self-regulatory processes over time. In particular, more research is needed to better understand which factors strengthen the self-regulatory beliefs and hinder the activation of MD mechanisms.

In addition, it is particularly important that future research also examines the role of norms and systems of control and sanction in moderating the relationship between the dimensions of the self-regulatory moral system and cheating behaviour. Future studies should examine, for example, whether the strength of the relationships investigated in this study varies depending on the strictness of honour codes.

Future studies should also replicate and scale up this study, through multi-method and multi-informant approaches (including peers and lecturers). Indeed, our study and previous research on academic dishonesty exclusively rely on self-reported measures because objective measures were neither available nor existent in the context in which the research was conducted. We acknowledge that using only self-reported data may underestimate the phenomenon; however, it must be noted that 'student self-report is the most common method for assessing cheating and has been shown to provide reasonable accurate estimates' (Finn and Frone 2004, p. 116), and we found frequencies of cheating behaviour in line with estimates in the literature.

Another limitation of the present study is that it relies on data on cheating behaviour collected only at two time points, rather than three as for R-SE and MD. As a result, we were able to examine the role of cheating behaviour in influencing MD and R-SE but not the role of MD and R-SE in sustaining the engagement in cheating behaviour over time. Hence, future studies should extend the time frame of the research and possibly follow students till their entrance into the labour market. This would, in turn, facilitate understanding of the effect of R-SE, MD, and unethical conduct during vocational education on later workplace behaviour.

Conclusion

Our findings provide evidence for the interplay among R-SE, MD, and academic dishonesty during vocational education. By adopting a longitudinal perspective, the present study shows for the first time the reciprocal causal association between MD and cheating behaviour. Hence, recourse to wrongdoing during a period of life in which moral development is ongoing (Colby et al. 1983; Rest 1988) may facilitate individuals' proneness to a type of reasoning that justifies rule-breaking conduct in the pursuit of their own interests. This can be potentially echoed in their future professional life. Indeed, it is likely to predict a vicious circle, in which engagement in cheating behaviour, in turn, makes the cognition, beliefs, and reasoning that sustain it more accessible. Finally, this study provides support for the protective role of R-SE in hindering cheating behaviour and MD over time. Hence, perceiving themselves as able to keep behaviour in line with standards and norms not only leads students to engage to a lesser extent in cheating behaviour but also to prevent the unethical mindset that may result in the perception of cheating behaviour as a regular and acceptable practice (Bates et al. 2005), potentially shaping future conduct in the workplace.

Acknowledgements The authors would like to thank R. Alvaro for her support in data collection. Moreover, they wish to thank K. Daniels, K. Nielsen, A. Sanz Vergel, and O. Tregaskis for their helpful comments on a preliminary draft, and E. Egwuenu who assisted in the proof-reading of the manuscript. This study was supported by grants from the Sapienza University of Rome (Visiting professor, C26V118AWM) and grant from IPASVI.

References

Albarracin, D., & Wyer, R. S., Jr. (2000). The cognitive impact of past behavior: Influences on beliefs, attitudes, and future behavioral decisions. *Journal of Personality and Social Psychology, 79*(1), 5–22. doi:10.1037/0022-3514.79.1.5.

Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp. 243–277). Mahwah, NJ: Lawrence Erlbaum.

Arhin, A. O., & Jones, K. A. (2009). A multidiscipline exploration of college students' perceptions of academic dishonesty: Are nursing students different from other college students? *Nurse Education Today, 29*(7), 710–714. doi:10.1016/j.nedt.2009.03.001.

Bagozzi, R. P., & Heatherton, T. F. (1994). A general approach to representing multifaceted personality constructs application to state self-esteem. *Structural Equation Modeling: A Multidisciplinary Journal, 1*(1), 35–67. doi:10.1080/10705519409539961.

Bandura, A. (1978). The self system in reciprocal determinism. *American Psychologist, 33*(4), 344–358. doi:10.1037/0003-066X.33.4.344.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1991). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development* (Vol. 1, pp. 45–103). Hillsdale, NJ: Erlbaum.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*(1), 1–26.

Bandura, A. (2016). *Moral disengagement: How people do harm and live with themselves*. New York: Worth.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology, 71*(2), 364–374. doi:10.1037/0022-3514.71.2.364.

Bandura, A., Barbaranelli, C., Caprara, G. V., Pastorelli, C., & Regalia, C. (2001). Sociocognitive self-regulatory mechanisms governing transgressive behavior. *Journal of Personality and Social Psychology, 80*, 125–135. doi:10.1037/0022-3514.80.1.125.

Bao, Z., Zhang, W., Lai, X., Sun, W., & Wang, Y. (2015). Parental attachment and Chinese adolescents' delinquency: The mediating role of moral disengagement. *Journal of adolescence, 44*, 37–47.

Bates, I., Davies, J. G., Murphy, C., & Bone, A. (2005). A multifaculty exploration of academic dishonesty. *Pharmacy Education, 5*(1), 69–76. doi:10.1080/15602210500086264.

Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238–246. doi:10.1037/0033-2909.107.2.238.

Bersoff, D. M. (1999). Why good people sometimes do bad things: Motivated reasoning and unethical behavior. *Personality and Social Psychology Bulletin, 25*(1), 28–39. doi:10.1177/0146167299025001003.

Boardley, I., & Kavussanu, M. (2007). Development and validation of the moral disengagement in sport scale. *Journal of Sport and Exercise Psychology, 29*(5), 608–628.

Boardley, I., & Kavussanu, M. (2008). The moral disengagement in sport scale-short. *Journal of Sport Sciences, 26*(14), 1507–1517.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

Brown, M. E., & Treviño, L. K. (2006). Ethical leadership: A review and future directions. *The Leadership Quarterly, 17*(6), 595–616. doi:10.1016/j.leaqua.2006.10.004.

Caprara, G. V., Fida, R., Vecchione, M., Tramontano, C., & Barbaranelli, C. (2009). Assessing civic moral disengagement: Dimensionality and construct validity. *Personality and Individual Differences, 47*, 504–509.

Caprara, G. V., Regalia, C., & Bandura, A. (2002). Longitudinal impact of perceived self-regulatory efficacy on violent conduct. *European Psychologist, 7*(1), 63.

Cattelino, E., Glowacz, F., Born, M., Testa, S., Bina, M., & Calandri, E. (2014). Adolescent risk behaviours and protective factors against peer influence. *Journal of Adolescence, 37*(8), 1353–1362. doi:10.1016/j.adolescence.2014.09.013.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural*

Equation Modeling, 9(2), 233–255. doi:10.1207/S15328007SEM0902_5.

Coffman, D. L., & MacCallum, R. C. (2005). Using parcels to convert path analysis models into latent variable models. *Multivariate Behavioral Research, 40*(2), 235–259. doi:10.1207/s15327906mbr4002_4.

Colby, A., Kohlberg, L., Gibbs, J., Lieberman, M., Fischer, K., & Saltzstein, H. D. (1983). A longitudinal study of moral judgment. *Monographs of the Society for Research in Child Development, 48*, 1–124. doi:10.2307/1165935.

d'Arripe-Longueville, F., Corrion, K., Scoffier, S., Roussel, P., & Chalabaev, A. (2010). Sociocognitive self-regulatory mechanisms governing judgments of the acceptability and likelihood of sport cheating. *Journal of Sport and Exercise Psychology, 32*(5), 595–618.

De Cremer, D., & Tenbrunsel, A. E. (Eds.). (2012). *Behavioral business ethics: Shaping an emerging field*. New York: Taylor & Francis.

Deter, J., Treviño, L. K., & Sweitzer, V. (2008). Moral disengagement in ethical decision making: A study of antecedents and outcomes. *Journal of Applied Psychology, 93*(2), 374–391. doi:10.1037/0021-9010.93.2.374.

Farnese, M. L., Tramontano, C., Fida, R., & Paciello, M. (2011). Cheating behaviors in academic context: Does academic moral disengagement matter? *Procedia-Social and Behavioral Sciences, 29*, 356–365. doi:10.1016/j.sbspro.2011.11.250.

Fida, R., Paciello, M., Tramontano, C., Fontaine, R. G., Barbaranelli, C., & Farnese, M. L. (2015). An integrative approach to understanding counterproductive work behavior: The roles of stressors, negative emotions, and moral disengagement. *Journal of Business Ethics, 130*(1), 131–144. doi:10.1007/s10551-014-2209-5.

Finn, K. V., & Frone, M. R. (2004). Academic performance and cheating: Moderating role of school identification and self-efficacy. *The Journal of Educational Research, 97*(3), 115–122.

Fontaine, R. G., Fida, R., Paciello, M., Tisak, M. S., & Caprara, G. V. (2014). The mediating role of moral disengagement in the developmental course from low social preference in adolescence to crime in early adulthood. *Psychology, Crime & Law, 20*, 1–19. doi:10.1080/1068316X.2012.719622.

Fox, S., Spector, P. E., & Miles, D. (2001). Counterproductive work behavior (CWB) in response to job stressors and organizational justice: Some mediator and moderator tests for autonomy and emotions. *Journal of Vocational Behavior, 59*(3), 291–309. doi:10.1006/jvbe.2001.1803.

Gini, G., Pozzoli, T., & Hymel, S. (2014). Moral disengagement among children and youth: A meta-analytic review of links to aggressive behavior. *Aggressive Behavior, 40*(1), 56–68. doi:10.1002/ab.21502.

Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin, 132*(5), 778–882. doi:10.1037/0033-2909.132.5.778.

Harding, T. S., Carpenter, D. D., Finelli, C. J., & Passow, H. J. (2004). Does academic dishonesty relate to unethical behavior in professional practice? An exploratory study. *Science and Engineering Ethics, 10*, 311–324. doi:10.1007/s11948-004-0027-3.

Hox, J. J. (2010). *Multilevel analysis. Techniques and applications* (2nd ed.). New York: Routledge.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55. doi:10.1080/10705519909540118.

Hyde, L. W., Shaw, D. S., & Moilanen, K. L. (2010). Developmental precursors of moral disengagement and the role of moral disengagement in the development of antisocial behavior. *Journal of Abnormal Child Psychology, 38*(2), 197–209. doi:10.1007/s10802-009-9358-5.

International Center for Academic Integrity, ICAI. (2015). *Overview*. Retreived from http://www.academicintegrity.org/icai/integrity-3.php.

Krueger, L. (2014). Academic dishonesty among nursing students. *Journal of Nursing Education, 53*(2), 77–87. doi:10.3928/01484834-20140122-06.

LaDuke, R. D. (2013). Academic dishonesty today, unethical practices tomorrow? *Journal of Professional Nursing, 29*(6), 402–406. doi:10.1016/j.profnurs.2012.10.009.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198–1202. doi:10.2307/2290157.

Little, T. D. (2013). *Longitudinal structural equation modeling*. New York: Guilford Press.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modelling: A Multidisciplinary Journal, 9*(2), 151–173. doi:10.1207/S15328007SEM0902_1.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Mahwah, NJ: Lawrence Erlbaum

McCabe, D. L. (2009). Academic dishonesty in nursing schools: An empirical investigation. *The Journal of Nursing Education, 48*(11), 614–623. doi:10.3928/01484834-20090716-07.

McCabe, D. L., Butterfield, K. D., & Treviño, L. K. (2012). *Cheating in college: Why students do it and what educators can do about it*. Baltimore: The Johns Hopkins University Press.

McCabe, D. L., & Treviño, L. K. (1993). Academic dishonesty: Honor codes and other contextual influences. *Journal of Higher Education, 64*, 522–538.

McCabe, D. L., Treviño, L. K., & Butterfield, K. D. (2001). Cheating in academic institutions: A decade of research. *Ethics and Behavior, 11*(3), 219–232. doi:10.1207/S15327019EB1103_2.

McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81–90.

McCrink, A. (2010). Academic misconduct in nursing students: Behaviors, attitudes, rationalizations, and cultural identity. *Journal of Nursing Education, 49*(11), 653–659. doi:10.3928/01484834-20100831-03.

Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika, 58*(4), 525–543. doi:10.1007/BF02294825.

Moore, C., Detert, J. R., Treviño, L. K., Baker, V. L., & Mayer, D. M. (2012). Why employees do bad things: Moral disengagement and unethical organizational behavior. *Personnel Psychology, 65*, 1–48. doi:10.1111/j.1744-6570.2011.01237.x.

Murdock, T. B., & Anderman, E. M. (2006). Motivational perspectives on student cheating: Toward an integrated model of academic dishonesty. *Educational Psychologist, 41*(3), 129–145. doi:10.1207/s15326985ep4103_1.

Newton, N. C., Havard, A., & Teesson, M. (2012). The association between moral disengagement, psychological distress, resistive self-regulatory efficacy and alcohol and cannabis use among adolescents in Sydney, Australia. *Addiction Research & Theory, 20*(3), 261–269.

Nonis, S., & Swift, C. O. (2001). An examination of the relationship between academic dishonesty and workplace dishonesty: A multicampus investigation. *Journal of Education for business, 77*(2), 69–77. doi:10.1080/08832320109599052.

O'Fallon, M. J., & Butterfield, K. D. (2012). The influence of unethical peer behavior on observers' unethical behavior: A social cognitive perspective. *Journal of Business Ethics, 109*(2), 117–131. doi:10.1007/s10551-011-1111-7.

Paciello, M., Fida, R., Cerniglia, L., Tramontano, C., & Cole, E. (2013). High cost helping scenario: The role of empathy, prosocial reasoning and moral disengagement on helping behavior. *Personality and Individual Differences, 55*(1), 3–7. doi:10.1016/j.paid.2012.11.004.

Paciello, M., Fida, R., Tramontano, C., Lupinetti, C., & Caprara, G. V. (2008). Stability and change of moral disengagement and its impact on aggression and violence in late adolescence. *Child Development, 79*(5), 1288–1309. doi:10.1111/j.1467-8624.2008.01189.x.

Park, E. J., Park, S., & Jang, I. S. (2013). Academic cheating among nursing students. *Nurse Education Today, 33*(4), 346–352. doi:10.1016/j.nedt.2012.12.015.

Raykov, T., & Marcoulides, G. A. (2011). *Introduction to psychometric theory*. New York: Routledge/Taylor & Francis.

Rest, J. R. (1988). Why does college promote development in moral judgement? *Journal of Moral Education, 17*(3), 183–194. doi:10.1080/0305724880170303.

Samnani, A.-K., Salamon, S. D., & Singh, P. (2014). Negative affect and counterproductive workplace behavior: The moderating role of moral disengagement and gender. *Journal of Business Ethics, 119*, 235–244. doi:10.1007/s10551-013-1631-4.

Scott-Lennox, J. A., & Lennox, R. D. (1995). Sex-race differences in social support and depression in older low-income adults. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 199–216). Thousand Oaks, CA: Sage.

Shu, L. L., Gino, F., & Bazermam, M. H. (2011). Dishonest deed, clear conscience: When cheating leads to moral disengagement and motivated forgetting. *Personality and Social Psychology Bulletin, 37*(3), 330–349. doi:10.1177/0146167211398138.

Shulman, E. P., Cauffman, E., Piquero, A. R., & Fagan, J. (2011). Moral disengagement among serious juvenile offenders: A longitudinal study of the relations between morally disengaged attitudes and offending. *Developmental Psychology, 47*(6), 1619.

Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika, 74*(1), 107–120. doi:10.1007/s11336-008-9101-0.

Simkin, M. G., & McLeod, A. (2010). Why do college students cheat. *Journal of Business Ethics, 94*, 441–453. doi:10.1007/s10551-009-0275-x.

Spector, P. E., & Fox, S. (Eds.). (2005). *Counterproductive work behavior: Investigations of actors and targets*. Washington, DC: American Psychological Association.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*(2), 173–180. doi:10.1207/s15327906mbr2502_4.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Allyn & Bacon/Pearson Education.

Tanaka, J. S. (1993). Multifaceted conceptions of fit in structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 10–39). Newbury Park, CA: Sage.

Treviño, L. K., & Nelson, K. A. (2011). *Managing business ethics: Straight talk about how to do it right* (5th ed.). New York: Wiley.

Vitaro, F., Brendgen, M., & Tremblay, R. E. (2000). Influence of deviant friends on delinquency: Searching for moderator variables. *Journal of Abnormal Child Psychology, 28*(4), 313–325.

Whitley, B. E. (1998). Factors associated with cheating among college students: A review. *Research in Higher Education, 39*(3), 235–274. doi:10.1023/A:1018724900565.

Williams, J., & MacKinnon, D. P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Structural Equation Modeling, 15*, 23–51. doi:10.1080/10705510701758166.

Wowra, S. A. (2007). Moral identities, social anxiety, and academic dishonesty among American college students. *Ethics and Behavior, 17*(3), 303–321. doi:10.1080/10508420701519312.