RESEARCH ARTICLE

Superstars are not necessarily role models: Morality perceptions moderate the impact of competence perceptions on supervisor role modeling

Kim Peters*, Niklas K. Steffens* & Thekla Morgenroth‡

* School of Psychology, University of Queensland, St. Lucia, Qld, Australia
‡ University of Exeter, Exeter, UK

Correspondence
Kim Peters, School of Psychology, University of Queensland, McElwain Building, Brisbane, Qld 4072, Australia.
E-mail: k.peters@uq.edu.au

Received: 13 July 2017
Accepted: 23 January 2018

https://doi.org/10.1002/ejsp.2372

Keywords: role models, competence, morality, social roles, inspiration

Abstract

There is a general assumption that we choose role models from the ranks of those who have demonstrated extraordinary competence. However, the person perception literature supports the expectation that morality may also matter, and that we may be most likely to role model competent individuals if we also believe that they have good moral character. To test this possibility, we conducted four studies of adults' role modeling of workplace supervisors. Study 1 (N = 245) and Study 2 (N = 110) showed that workplace supervisors' perceived competence was most strongly associated with role model perceptions when the supervisor was also seen as moral. Study 3 (N = 492) and 4 (N = 335) replicated these findings with pre-registered experiments, and revealed indirect effects of supervisor attributes on role modeling through emulation. Results suggest that we choose organizational role models who have achieved success in ways that are in line with our moral values.

> A role model has to have what Aristotle would have called virtues... You have to display empathy... understanding ... be producing stuff in good quality journals ... — Academic researcher (Peters & Bentley, 2017)

> They're unethical, they're slimy, they're bad people, they're self-promoting ... I probably have more anti-models than I have models. — Team leader (Gibson, 2003)

There is a great deal of evidence that our impressions of others are strongly influenced by our perceptions of their moral character (e.g., Abele & Wojciszke, 2014; Fiske, Cuddy, Glick, & Xu, 2002; Ybarra, Park, Stanik, & Lee, 2012). However, in the role modeling literature, there has been little consideration of the possibility that our perception of a person's morality may influence our desire to follow in their footsteps (for an exception see Fuesting & Diekman, 2017). Instead, there is a general assumption that role modeling is primarily underpinned by perceptions of a person's competence. Among other things, this can be seen from the fact that researchers testing the effects of role models have typically done so by exposing people to individuals who are known to have demonstrated extraordinary competence (e.g., Hilary Clinton and Barack Obama; Aronson, Jannone, McGlone, & Johnson-Campbell, 2009; Hoyt, 2013; Marx, Ko, & Friedman, 2009) or who are reported to be highly successful (e.g., high achieving student "superstars" or successful physicians; Lockwood, 2006; Lockwood & Kunda, 1997; Rosenthal, Levy, London, Lobel, & Bazile, 2013).

However, this assumption—that competence creates role models—sits uncomfortably with the quotes that we have provided above. In particular, in the first extract, the interviewee indicates that he considers a range of attributes when choosing his academic role models, and that while competence is important to him (in the form of high quality publications) so too are attributes like empathy, which fall within the morality domain. The second extract goes somewhat further, suggesting that good moral character may actually be necessary for role modeling. Specifically, this team leader seems to suggest that because she sees her successful senior colleagues as immoral (unethical, bad, and self-promoting), she considers them a model of who she does *not want to be*. In this introduction, we will explore the evidence that morality may indeed matter, and that people may be most sensitive to a potential role model's success and

competence if this person is seen to have achieved it *in the right way*.

This article summarizes four studies that test the assertion that workers' perceptions of their supervisors' competence will be most strongly associated with seeing them as personal role models when perceptions of these supervisors' morality is also high. The supervisory relationship provides an appropriate context for this test because supervisors provide an image of the role that a worker may occupy in the future, and are thus salient models of a (potentially) desired future role (see Lockwood & Kunda, 1997). In addition, the ubiquity of supervisory relationships means that it is possible to explore the impact of perceived competence and morality while holding constant a potential model's occupational role. As a secondary aim, this article also aimed to advance our understanding of the functions of role models by examining the mediational effect of a supervisor's capacity to fulfil the core functions that have been attributed to role models: emulation, inspiration, and self-efficacy (Morgenroth, Ryan, & Peters, 2015). Together, this work will indicate whether it is possible to recruit role modeling processes simply by presenting targets with images of those who have achieved extraordinary success and competence, or whether other attributes need to be considered too.

Defining Role Models

We define role models as individuals who have mastered a given social role and who mobilize a role aspirant to engage in behaviors that are directed towards acquiring the same, or a similar, role. Social roles are the social categories that capture the complementary tasks and responsibilities of people in different positions within a social system (Ashforth, 2001; Katz & Kahn, 1978). In the literature, there is broad agreement that role models may facilitate the acquisition of social roles by presenting aspirants with an image of what is possible and how to get there (e.g., Hoyt, 2013; Ibarra, 1999; Lockwood, 2006). These ideas are formalized in the motivational theory of role modeling (Morgenroth et al., 2015) which argues that role models serve the three core functions of emulation, inspiration, and self-efficacy. Specifically, by showing what is possible, role models may inspire aspirants to acquire similar roles (e.g., Paice, Heard, & Moss, 2002). By showing that it can be done, they may also boost aspirants' self-efficacy (e.g., McIntyre, Paulson, Taylor, Morin, & Lord, 2011). Finally, by showing how to get there, role models demonstrate behaviors that aspirants may emulate in their attempts to acquire similar roles (e.g., Bandura, 1977; Ibarra & Petriglieri, 2008; Kemper, 1968).

Importantly, role modeling can be distinguished from other forms of social influence that can be exercised by senior individuals in the workplace, such as mentoring, supervision, and leadership, in at least three ways. First, unlike mentoring and supervision, role modeling does not require the active or intentional involvement of the role model (e.g., Addis, 1996). Second, unlike supervision and leadership, role modeling should facilitate an aspirant's acquisition of a desired social role, where this may not increase the aspirants' performance on tasks prioritized by the organization (Haslam, Reicher, & Platow, 2011). Third, unlike supervisors, leaders and (occasionally) mentors, role models are not formally designated as such. And indeed, when asked, people tend to identify only a relatively small number of personal role models (i.e., fewer than five; Cotton, Shen, & Livne-Tarandach, 2011).

While there is reasonable consensus that role models serve inspiration, emulation, and self-efficacy functions, the number of direct tests of these claims is rather limited. Nonetheless, studies that have asked people to reflect on their role models or that have examined the association between workers' possession of role models and their occupational outcomes generally support the possibility that role models are a source of inspiration and social learning (e.g., Brown & Trevino, 2014; Coltrin & Glueck, 1977; Gibson, 2003; Ibarra, 1999; Quimby & DeSantis, 2006). The social comparison and social learning literatures also provide indirect support in their claims that upward social comparisons can have positive implications for a person's self-concept, motivation, and performance (Bandura, 1986; Festinger, 1954; Kemper, 1968; Suls, Martin, & Wheeler, 2002). And indeed, there is evidence that people who are looking to develop skills or improve their performance in a particular domain tend to make comparisons with targets who have exhibited higher levels of mastery in the same domain (Bandura, 1977; Bounoua et al., 2012; Buunk & Gibbons, 2007; Dijkstra, Kuyper, van der Werf, Buunk, & van der Zee, 2008; Wheeler, 1966; Ybema & Buunk, 1993). Providing this comparison is not perceived as threatening to self, there is evidence that it can bolster a person's self-efficacy (Buunk & Ybema, 1997; Huguet, Dumas, Monteil, & Genestoux, 2001; Locke, 2005) and may be associated with improved performance (Blanton, Buunk, Gibbons, & Kuyper, 1999; Huguet et al., 2001).

Although it is likely that a person could identify many more upwards comparison targets (i.e., all those who have mastered a given social role) than they would personal role models, this literature does bolster expectations that role models serve useful functions. At the same time, it suggests that to build a better understanding of role modeling it is important to understand who people select as personal role models, as the positive benefits of upwards comparison may only accrue when these targets are considered to be personal role models. In this article, we aim to take the first step in this direction by exploring the perceptual underpinnings of role modeling. We will also test the functional model articulated by the motivational theory of role modeling by seeing whether workers base their role model perceptions on their judgments that their supervisor fulfils emulation, inspiration, and self-efficacy functions. In this way, we can better

understand whether workers consider the fulfilment of these functions a prerequisite for role modeling.

Perceptual Underpinnings of Role Modeling

If role models are to help role aspirants to acquire desired social roles then it makes sense that an aspirant's perceptions of a role occupant's competence should matter (Morgenroth et al., 2015). After all, the role occupants who are most likely to help an aspirant to attain a desired social role are those who have more mastery than the aspirant. Evidence for the importance of competence perceptions comes from work that has shown that people may be protected against the effects of stereotype threat if they are exposed to an individual who has (vs. has not) demonstrated competence in the stereotyped domain (e.g., McIntyre et al., 2011; although see Hoyt, 2013; Hoyt & Simon, 2011, for evidence that in some situations exposure to very competent individuals may have negative effects).

However, there is reason to believe that perceived competence is not enough for role modeling, and that it is when role occupants are perceived to be moral that aspirants are most likely to attend to their competence. This expectation is based on the large body of work that has shown that people's impressions of other individuals and groups are informed by two broad attribute dimensions (Abele & Wojciszke, 2014; Fiske et al., 2002; Leach, Ellemers, & Barreto, 2007; Peeters, 1992; Phalet & Poppe, 1997; Wojciszke, 2005; Ybarra et al., 2012). The first "agency" dimension represents task-related attributes and captures the implications that behavior has for a person's own goal achievement (e.g., being intelligent, conscientious, and determined is generally useful for achieving performance goals). This can be further divided into the sub-dimensions of *competence*, reflecting a person's ability to achieve their goals, and *assertiveness*, reflecting their motivation to do so (Abele et al., 2016). The second "communion" dimension represents social relational attributes and captures the implications that behavior has for a person's relations with others (e.g., being friendly, cooperative, and honest is generally useful for building positive relationships and achieving smooth interactions). This can be further divided into the sub-dimensions of *morality*, reflecting a person's tendency to act ethically and with integrity, and *sociability*, reflecting a person's tendency to be friendly and warm (Goodwin, Piazza, & Rozin, 2014).

Research has shown that perceivers are especially sensitive to the morality sub-dimension (Brambilla, Rusconi, Sacchi, & Cherubini, 2011; Brambilla, Sacchi, Ruschoni, Cherubini, & Yzerbyt, 2012; Goodwin et al., 2014; Wojciszke, 2005; Wojciszke, Dowhyluk, & Jaworski, 1998). That is, in many circumstances, people's general impressions of others are determined primarily by perceptions of morality, and only secondarily by perceptions of sociability or competence (the unique contribution of assertiveness has received little attention in the literature to date). Importantly, this sensitivity to morality also emerges in task-related contexts, even though formal evaluations in these contexts are primarily based on competence (cf., van Prooijen & Ellemers, 2015). For instance, there is evidence that people place more weight on morality than on competence when deciding how much help they would be willing to provide to a new school manager (Pagliaro, Brambilla, Sacchi, D'Angelo, & Ellemers, 2013; although see Brambilla et al., 2011; Brambilla, et al., 2012), whether they would want to work with a particular supervisor (Fuesting & Diekman, 2017), and whether they would like to join a particular task group (van Prooijen & Ellemers, 2015).

In exploring the importance of task-related "agentic" attributes and interaction-related "communal" attributes in a worker's role modeling of their supervisor, we therefore follow previous work by focusing on the specific sub-components of competence (skills, knowledge, abilities) and morality (honesty, trustworthiness, integrity). At the same time, we move beyond much of the work in the person perception literature by proposing that perceived competence and morality are likely to have an interactive impact on role modeling, such that workers are more inclined to take a supervisor's perceived competence into account when they perceive the supervisor to be moral. This expectation is informed by the finding that whether a colleague's perceived competence influenced the likelihood that people would approach the colleague for help on a work task depended on his or her likeability (Casciaro & Sousa Lobo, 2008). In particular, if individuals did not like a colleague, then they tended not to engage with her, regardless of her perceived competence. This possibility is particularly interesting because immoral behavior may make it easier to achieve workplace rewards that are based on individual performance (cf., van Prooijen, Ellemers, van der Lee, & Scheepers, 2016). Thus, evidence that perceived morality conditions the impact of competence on the ways in which we engage with and respond to others in the workplace would suggest that role aspirants may be concerned about more than chasing the rewards that are accrued by competent but immoral role occupants (Bandura, 1969).

The findings that we have described in this section provide the basis for our expectations that perceived morality is important, and indeed necessary, for perceiving a supervisor as a role model. Our primary aim in this article is to test these expectations in the form of these three hypotheses:

H1: A role occupant's perceived competence will be positively related to role modeling.

H2: A role occupant's perceived morality will be positively related to role modeling.

H3: A role occupant's perceived morality will moderate the impact of his or her perceived competence on role modeling such that the positive relationship between competence and role modeling will be more pronounced when morality is high, rather than low.

A second aim of this work is to test whether workers choose their role models according to their ability to fulfil the functions articulated by the motivational theory of role modeling (Morgenroth et al., 2015). Evidence that people's relationships with others are informed by the perception that they serve functions is provided by Fuesting and Diekman (2017), who showed that students were more willing to work with a supervisor who was high in communality (vs. agency) because they perceived that this supervisor would help them to achieve their work goals. Consequently, we suggest that perceptions of a role occupant's competence and morality will translate into role modeling because workers believe that competent and moral role occupants will satisfy their need for a model to emulate, be inspired by, and to shore up their role-related self-efficacy. This provides the basis for our fourth hypothesis.[1]

H4: The impact of perceived occupant competence and morality on role modeling will be mediated through (a) emulation, (b) inspiration, and (c) self-efficacy.

A final aim of this article is to conduct three exploratory analyses. The first examines whether supervisors who are perceived to be role models are also perceived to be high quality supervisors, and whether these judgments have shared perceptual underpinnings. This analysis will shed light on ways in which role modeling and supervision processes may intersect. The second analysis draws on Lockwood, Jordan, and Kunda's (2002) finding that some people find "negative" models motivating to examine whether supervisors who lack competence and morality can nevertheless teach and motivate workers (albeit in terms of what not to do). The final analysis (Study 4) tests Ashforth, Schinoff, and Rogers's (2016) claim that role modeling involves personal identification by examining whether identification mediates the impact of perceived competence and morality on role modeling.

Overview

We present the results of four studies that examine our model (see Figure 1). Studies 1 and 2 tested our hypotheses using cross-sectional field surveys to assess working adults' perceptions of the attributes and role modeling of their supervisors. Studies 3 and 4 provided experimental replications of our hypotheses. Study 3 used a critical incident methodology (Flanagan, 1954) to assess working adults' tendencies to model themselves on a supervisor whose competence and morality varied in specified ways. Study 4 assessed participants' role modeling of a hypothetical supervisor who had behaved in competent (or incompetent) and moral (or immoral) ways. In addition to providing stronger causal evidence of the impact of competence and morality on role modeling, the experimental studies were able to explore the impact of a wider range of attribute levels (i.e., low vs. high competence and morality) than was possible in the field studies (the majority of supervisors were perceived to have moderate to high levels of competence and morality).

The design and procedures of Study 3 and 4 were pre-registered on the Open Science Framework (Study 3: https://osf.io/psyj6/; Study 4: https://osf.io/3vzc7/). The materials and data from all studies are available on the Open Science Framework: https://osf.io/kemvu/. Results from power analyses using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) for revealing the significant interaction effect on role model modeling (represented by H3) across the four studies are presented in Table 1. As this table shows, all studies had high levels of statistical power, providing confidence in the reliability of these perceptual processes. We obtained ethical clearance to conduct the studies from the first author's institutional human research ethics committee (reference numbers for Studies 1 to 4: 2015000921, 2014001379a, 2014001379b, 16-PSYCH-S-O8-JS).

Study 1

Method

Participants. Participants were 262 government agency employees (an approximately 60% response rate) who responded to an email requesting that they complete an online questionnaire about their work experiences. The final sample for analytic purposes consisted of the 245 participants who completed the supervisor attribute and role modeling scales. The demographic characteristics of this sample are summarized in Table 2.

Measures. As part of a broader survey on workplace attitudes in the context of ongoing change within the agency, participants were asked to respond to seven items that related to their perceptions of their immediate supervisor. These items were accompanied by identical 7-point Likert scales (1 = *strongly disagree*; 7 = *strongly agree*). The research context made it necessary to keep the questionnaire

[1] This hypothesis was fully specified in the preregistration of Study 3, but not in the preregistration of Study 4 (here, it was expressed as exploratory).

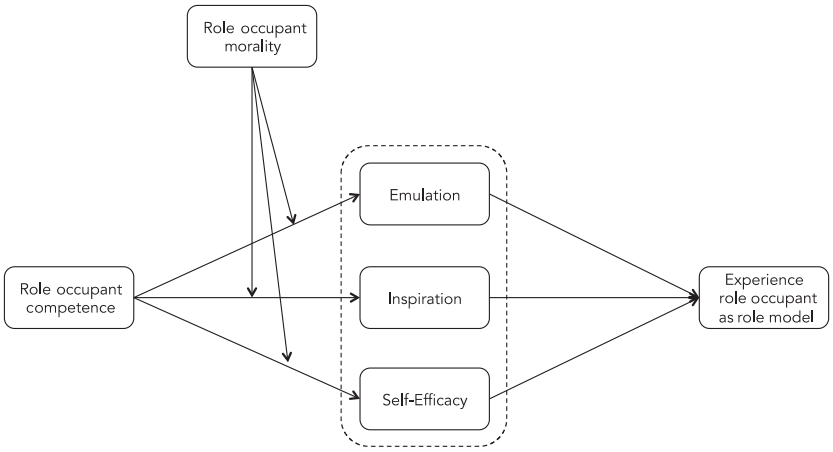

Fig. 1: Conceptual model displaying the interactive impact of role occupant competence and morality on individuals' experience of role occupant as role model through (a) emulation, (b) inspiration, and (c) self-efficacy

Table 1. Studies 1–4: Power analyses related to the H3 interaction between competence and morality on role modeling including Ns required to reliably replicate this effect eight out of 10 times

	B	*t*	*p*	ΔR^2	Power	*N*	Required *N*[a]
Study 1	.11	4.93	.001	.04	.89	245	191
Study 2	.19	4.35	.001	.09	.92	110	78
	F	*df*	*p*	η^2	Power	*N*	Required *N*[a]
Study 3	145.76	1	.001	.09	.99	492	115
Study 4	5.72	1	.017	.01	.67	335	456

Note: [a]$p < .05$, Power = .80.

as short as possible. Therefore, to assess participants' perceptions of their supervisors' morality and competence, we asked participants to respond to two single-item measures (based on Leach et al., 2007): "My supervisor is moral at work (that is, honest, trustworthy, acts with integrity)" and "My supervisor is competent at work (that is, has valuable knowledge, skills, abilities)". To measure participants' role modeling of their supervisor we used the following 5-item scale ($\alpha = .98$; based on Rich, 1997): "My supervisor is someone I consider to be a role model in my life"; "My supervisor sets an example that I want to live up to in my own career"; "My supervisor is someone whose footsteps I would like to follow"; "My supervisor is someone I will look to when thinking about the next steps in my career"; "My supervisor provides an example of the career I would like to pursue for myself".

Results and Discussion

Preliminary analysis. Descriptive statistics are summarized in Table 3. From this it is apparent that there were strong positive associations between participants' perceptions of supervisor morality and competence and role modeling (all bivariate correlations exceed the criterion of $r = .50$ for a "large" effect size; Cohen, 1988). There was no evidence that participants' ratings of their supervisors were associated with any of the demographic characteristics (all $r \leq .13$, $p \geq .060$).[2,3] Ratings of supervisors' competence and morality were predominantly on the positive end of the scale (only 13% of morality ratings and 13% of competence ratings were <3). This study thus compares the role modeling of supervisors with moderate to high attribute levels.

Main analysis. We used OLS regression to regress participants' role modeling of their supervisor onto the mean-centered perceptions of their supervisor's morality, competence, and their product. Together, these variables accounted for over half of the variance in role modeling, $R^2 = .60$, $F(3,241) = 121.98$, $p < .001$. Importantly, the multicollinearity indicators for this analysis fell within an acceptable range (all Variance Inflation Factors < 2.50). This analysis supported H1 and H2, as participants were more likely to role model supervisors who they perceived to be more competent, $b = .51$, 95% C.I.: 0.38–0.64, $t(241) = 7.79$, $p < .001$,

[2] We examined the impact of worker and supervisor gender on role modeling in all four studies by repeating the key regression analyses with dummy variables representing worker and supervisor gender, as well as their two- and three-way interactions. Only one gender effect exceeded conventional levels of significance: the three-way interaction between female worker, supervisor morality, and supervisor competence in Study 3: $b = .21$, $t(484) = 2.27$, $p = .024$. This effect showed that participants' greater sensitivity to the competence of moral supervisors was stronger for women than men (male $b = .43$; female $b = .64$). In sum, then, across our studies there is very little evidence that gender consistently affected the role modeling of workplace supervisors in the contexts that we were examining.

[3]There was evidence that participants' perceptions of their supervisors violated assumptions of normality across Studies 2, 3, and 4 (all Shapiro-Wilks $\leq .966$, $p \leq .006$). To check the robustness of the main analysis to this non-normality, we replicated this analysis using median regression—a nonparametric approach that minimizes the sum of the absolute residuals (Cameron & Trivedi, 2010). This produced an identical pattern of findings in all studies, which suggests that the violation of normality is not problematic in this instance.

Table 2. Studies 1–4: Sample and supervisor demographics

Demographic characteristic	Study 1	Study 2	Study 3	Study 4
$N_{analytic}$	245	110	492	335
Participant demographics				
M_{age} (*SD*)[a]	42.62 (10.89)	30.34 (11.70)	36.01 (10.89)	3.30 (1.12)
Gender				
Female	65%	76%	49%	56%
Male	29%	24%	51%	43%
Seniority				
Very junior and junior	—	51%	54%	—
Intermediate	—	35%	38%	—
Senior and very senior	—	14%	8%	—
Employment status				
Full-time	86%	39%	76%	57%
Part-time	8%	24%	13%	43%
Casual	—	14%	2%	—
Retired	—	3%	1%	—
Unemployed	—	10%	5%	—
Years employment[b]	7.72 (8.51)	11.00 (10.74)	15.74 (9.88)	—
Supervisor demographics				
Relationship status				
Current	100%	66%	50%	
Previous	—	34%	50%	
Relative age				
5 or more years younger	—	8%	10%	
Within 5 years	—	21%	21%	
5 or more years older	—	71%	69%	
Gender				
Female	—	57%	36%	
Male	—	43%	64%	
Seniority				
Very junior and junior	—	4%	5%	
Intermediate	—	19%	13%	
Senior and very senior	—	77%	82%	

Notes: [a]Study 4 measured age in 10 year increments: 1 = <20, 2 = 20–29, 3 = 30–39, 4 = 40–49, 5 = 50–59 and 6 = 60–69 years.
[b]Study 1 value represents years working for agency; values do not sum to 100% where participants did not respond to question.

Table 3. Studies 1 and 2: Scale means, standard deviations, and bivariate correlations

Scales	Study 1 Mean (*SD*) [95%C.I.]	Study 2 Mean (*SD*) [95%C.I.]	1	2	3	4	5	6	7
1. Supervisor morality	5.11 (1.86) [4.88, 5.34]	5.33 (1.59) [5.03, 5.63]	—	.74	.70				
2. Supervisor competence	5.23 (1.79) [5.01, 5.45]	5.66 (1.40) [5.40, 5.92]	.69	—	.70				
3. Role modeling	3.82 (1.84) [3.59, 4.05]	3.58 (1.60) [3.28, 3.88]	.60	.52	—				
4. Emulation	—	3.98 (1.58) [3.68, 4.27]	.64	.60	.70	—			
5. Inspiration	—	4.11 (1.74) [3.78, 4.44]	.53	.47	.69	.64	—		
6. Self-efficacy	—	4.34 (1.69) [4.03, 4.66]	.58	.48	.74	.67	.80	—	
7. Negative modeling	—	3.90 (1.88) [3.55, 4.25]	−.61	−.51	−.71	−.65	−.55	−.64	—
8. Endorsement	—	4.36 (1.92) [4.00, 4.73]	.71	.58	.74	.74	.67	.74	−.75

Note: Study 1 correlations appear above the diagonal line, and Study 2 correlations below it. Study 1 $N = 245$; Study 2 $N = 110$; all correlations significant at $p < .01$.

and more moral, $b = .45$, 95% C.I.: 0.33–0.57, $t(241) = 7.79$, $p < .001$.

This analysis also provided support for H3, as the two-way interaction between supervisor competence and morality was significant, $b = .11$, 95% C.I. 0.06–0.15, $t(241) = 4.93$, $p < .001$. Decomposing this interaction (at 1 standard deviation above and below the mean; see Figure 2) reveals that participants were more than twice as sensitive to the competence of highly moral supervisors ($b = .71$, 95% C.I.: 0.54–0.88, $t(241) = 8.19$, $p < .001$) than they were to the competence of moderately moral supervisors ($b = .31$, 95% C.I.: 0.18–0.44, $t(241) = 4.69$, $p < .001$). This supports our claim that being competent may be important for role modeling, but is not sufficient. Indeed, workplace superstars were only likely to be role models (with ratings above the scale mid-point) when they were very moral.

Although this study had a number of strengths—notably the reasonably high response rate among the agency's employees—it had a number of limitations too. In particular, because of the practical constraints

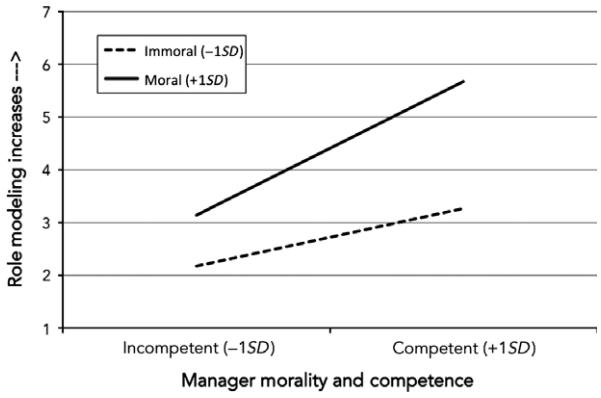

Fig. 2: Study 1: Role modeling ratings as a function of supervisor competence and morality

that were associated with this particular research context, we were not able to measure the potential role modeling functions of emulation, inspiration, and self-efficacy that are central to H4. We addressed this limitation in Study 2.

Study 2

Method

Participants. Participants were 219 working adults who responded to an online questionnaire. Participants were working adults who were contacted by email by members of the authors' lab groups and responded before a set cut-off date. Participants who resided in Australia (41% of the initial sample) were entered into a raffle to win one of four A$50 vouchers. We excluded 95 participants who failed to respond to one or more of the non-demographic items (89% of these participants provided very little or no data) and another 14 participants who responded incorrectly to two control items (e.g., "This is a control question—please select '2'"). The final sample for analytic purposes consisted of the 110 participants who remained. We have provided the demographic characteristics of these respondents and their supervisors in Table 2.

Measures. Participants were asked to respond to 37 items that measured their perceptions of their work supervisor. Participants who did not have a supervisor (defined as the person to whom they reported in their job) at the time of completing the survey were asked to think of the person who had most recently occupied that role for them at work. After participants had provided their supervisor's demographic characteristics (see Table 2), they responded to the items on identical 7-point Likert scales (1 = *strongly disagree*, 7 = *strongly agree*). In all items, we substituted "my supervisor" with the name that participants provided for their supervisor.

Attributes. We measured supervisor morality with four items (α = .95; based on Leach et al., 2007): [My supervisor] "is moral", "is honest", "is trustworthy", and "acts with integrity". We measured supervisor competence with four items (α = .94): [My supervisor] "is competent", "is knowledgeable", "is skilled", and "has valuable abilities".

Role modeling. We measured supervisor role modeling with an adapted version of the scale described in Study 1 (α = .87). This adaptation involved changing the tense to allow for the possibility that participants who were rating a previous supervisor may have considered him or her to be a role model in the past. For instance, the first item in the role modeling scale became: "I have considered [my supervisor] to be a role model in my life". We also reversed item 4: "I have not looked to [my supervisor] when thinking about the next steps in my career".

Emulation. We measured supervisor emulation with five items (α = .93): "I have modeled my work behaviors on those of [my supervisor]"; "When challenged at work, I have tried to imagine how [my supervisor] would approach the problem"; "In order to succeed at work, I have imitated [my supervisor]'s behavior"; "I have observed [my supervisor]'s behavior when trying to deal with a new task"; and "I have tried to behave like [my supervisor] at work".

Inspiration. We measured supervisor *inspiration* with five items (based on Nauta & Kokaly, 2001): "Working with [my supervisor] has made me adopt more ambitious goals for my career"; "Working with [my supervisor] has inspired me to achieve my career goals"; "I feel more motivated in my career as a result of working with [my supervisor]"; "I find [my supervisor] inspirational"; and "[My supervisor] has opened my eyes to the possibilities that are ahead of me in my career." Confirmatory factor analysis (described below) supported the use of a 3-item scale that excluded the last two items (α = .92).

Self-efficacy. We measured the extent to which the role occupant boosted participants' *self-efficacy* with five items (based on Chen, Gully, & Eden, 2001; α = .93): "[My supervisor] has given me the confidence that I can achieve anything I set my mind to"; "Working with [my supervisor] has made me realize that I can achieve my career goals"; "I feel more confident when making difficult decisions in my role as a result of working with [my supervisor]"; "[My supervisor] has helped me to believe that I can succeed at almost any endeavor I set my mind to"; and "[My supervisor] has made me see that compared to other people I can do most tasks very well".

We also included exploratory measures related to negative modeling and supervisor endorsement.

Negative modeling. We measured negative modeling by asking participants to respond to five items (α = .94). "[My supervisor] has illustrated the

behaviors that I want to avoid at work"; "I try my best to ensure that my actions are clearly different from those of [my supervisor]"; "Working with [my supervisor] has taught me what I do not want to do in my career"; "Spending time with [my supervisor] has motivated me to avoid his/her career mistakes"; and "Working with [my supervisor] has made me realize that I am not willing to make the same decisions in my own career".

Endorsement. We measured supervisor *endorsement* with the following three items ($\alpha = .92$): "If a local newspaper asked for nominations for an 'inspiring colleague of the year' award, I would nominate [my supervisor]"; "If [my supervisor] set up a new company and created a new job for me, I would be willing to work for [my supervisor] again"; and "If a younger relative was offered a job that would involve working with [my supervisor], I would recommend that they accept it".

As an additional measure of endorsement, we asked participants to provide a written response to a question about the *career impact* of their supervisor: "Imagine that you are given an award for good performance at your workplace. After you receive the award, a distant colleague of yours says that they know that [your supervisor] is your line manager. They ask what role [your supervisor] has played in your performance, and your career more generally. How would you respond to this question?"

Results and Discussion

Preliminary analysis. We used confirmatory factor analyses to assess the fit of our conceptual model, which loaded the role modelling, emulation, inspiration, and self-efficacy items onto factors representing the four scales. Results revealed some level of model misspecification (see Table 4 for fit statistics) that was associated with high cross-factor loadings of the inspiration items "I find [my supervisor] inspirational" and "[My supervisor] has opened my eyes to the possibilities that are ahead of me in my career". The alternative 18-item four factor model that excluded these two items provided a better fit of the data according to the Akaike Information Criterion. Importantly, this alternative model achieved marginal-to-good fit of the data, and outperformed the 18-item model that loaded all items onto a single latent factor, LR $\chi^2(6) = 361.86$, $p < .001$, as well as the one that loaded the role modelling and emulation items onto one factor and the inspiration and self-efficacy items onto another, LR $\chi^2(5) = 205.81$, $p < .001$. On this basis, we omitted the problematic items when constructing the inspiration scale.

Study descriptive statistics are provided in Table 3. The bivariate correlations reveal strong positive associations between the measures, with almost all exceeding the criterion of $r = .50$ for a "large" effect size. Ratings of supervisors' competence and morality were again predominantly on the positive end of the scale (only 13% of morality ratings and 7% of competence ratings were <3). As in Study 1, this study compares the role modeling of supervisors with moderate to high attribute levels.

Unlike Study 1, there were some significant associations between participants' responses and their own or their supervisor's demographic characteristics. Among other things, participants who worked full-time or in more senior positions were more likely to see their supervisor as a role model ($r = -.27$, $p = .007$ and $r = .20$, $p = .050$, respectively). Participants were also more likely to see current supervisors or those who were more senior as role models ($r = -.20$, $p = .040$ and $r = .21$, $p = .032$, respectively). Controlling for the participant and supervisor demographic characteristics in the main analysis did not change the pattern of findings reported below. Furthermore, none of the demographic variables attained conventional levels of significance (all $b \leq .40$, $p \geq .127$). For these reasons, the analyses that we report below do not include the demographic characteristics.

Main analysis. We regressed role modeling onto the mean-centered ratings of supervisor morality and competence and their two-way interaction.[2] Together, these predictors accounted for around half of the variance in role modeling, $R^2 = .48$, $F(3,106) = 44.16$, $p < .001$. The multicollinearity indicators for this analysis fell within an acceptable range (all VIF < 2.50). We found further support for H1 and H2 as participants were more likely to see their supervisor as their role model if they perceived their supervisor to be more competent, $b = .47$, 95% C.I.: 0.23–0.71, $t(106) = 3.80$, $p < .001$, or more moral, $b = .49$, 95% C.I.: 0.30–0.68, $t(106) = 5.03$, $p < .001$.

Importantly, in line with H3, the interaction between these variables was significant, $b = .19$, 95% C.I.: 0.11–0.28, $t(106) = 4.35$, $p < .001$. Decomposing this interaction (1 standard deviation above and below the mean; see Figure 3) showed that participants were about four times more sensitive to their supervisor's competence when their supervisor was highly moral, $b = .78$, 95% C.I.: 0.45–1.10, $t(106) = 4.68$, $p < .001$, than when their supervisor was moderately moral, $b = .16$, 95% C.I.: −0.07 to 0.38, $t(106) = 1.38$, $p = .171$. These findings therefore provide additional support for our claim that perceived competence is not sufficient for role modeling; it is when role occupants are perceived moral that a role occupants' perceived competence is most likely to matter.

Indirect effects analysis. In H4, we proposed that the relationship between a supervisor's perceived competence and morality and participants' role modeling of this supervisor would be mediated through three possible role modeling functions: emulation, inspiration, and self-efficacy. We tested this claim with Preacher and Hayes's (2008) approach for testing parallel indirect effects with OLS regression and 5,000 bootstrap samples (all predictors were mean centered).

Table 4. Confirmatory factor analysis goodness-of-fit indices

	20-item 4 factor	18-item 4 factor	18-item 1 factor	18-item 2 factor
Study 2				
df	164	129	135	134
Chi-square	347.73, $p < .001$	241.99, $p < .001$	603.85, $p < .001$	447.80, $p < .001$
Std. RMR	.052	.046	.076	.061
RMSEA	.101	.090	.178	.147
RMSEA CI	.087–.116	.072–.107	.164–.193	.132–.162
CFI	.92	.94	.76	.84
AIC	6,976.48	6,283.82	6,633.68	6,479.63
Study 3				
df	164	129	135	134
Chi-square	1,181.83, $p < .001$	467.88, $p < .001$	2,523.27, $p < .001$	1,113.34, $p < .001$
Std. RMR	.069	.034	.092	.042
RMSEA	.112	.073	.190	.122
RMSEA CI	.106–.118	.066–.080	.183–.196	.115–.129
CFI	.92	.97	.79	.91
AIC	29,876.79	26,594.08	28,637.47	27,229.54
Study 4				
df	164	129	135	134
Chi-square	1,029.54, $p < .001$	431.80, $p < .001$	2,251.61, $p < .001$	831.68, $p < .001$
Std. RMR	.106	.050	.156	.063
RMSEA	.126	.084	.217	.125
RMSEA CI	.119–.133	.075–.093	.209–.225	.117–.133
CFI	.90	.96	.72	.91
AIC	20,004.63	17,620.94	19,428.68	18,010.75

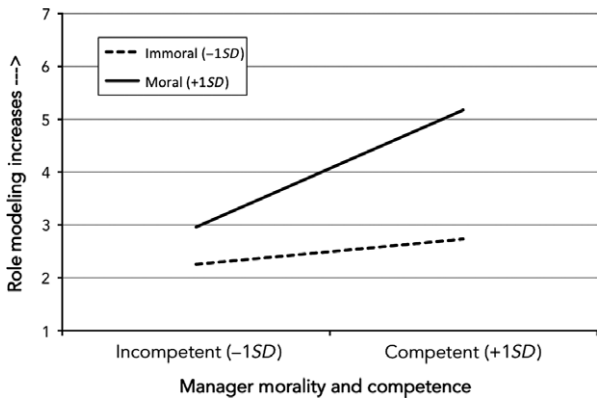

Fig. 3: Study 2: Role modeling ratings as a function of supervisor competence and morality

We repeated this analysis for each of the supervisor attribute variables in turn; the two non-focal attribute variables (i.e., competence, morality and/or their two-way interaction) were included as covariates. While multicollinearity indicators for this analysis were higher (all VIF < 3.24) they were nonetheless in the range that most authors consider acceptable (e.g., Kennedy, 1992; Menard, 1995).

A consistent pattern of indirect effects emerged. Perceptions of supervisor competence were indirectly related to role modeling through emulation ($\gamma = .12$, 95% bias corrected C.I.: 0.04–0.26) and self-efficacy ($\gamma = .11$, 95% C.I.: 0.02 to 0.26), but not inspiration ($\gamma = .05$, 95% C.I.: −0.03 to 0.19). Perceptions of supervisor morality were also indirectly related to role modeling through emulation ($\gamma = .11$, 95% C.I.: 0.03 to 0.24) and self-efficacy ($\gamma = .17$, 95%C.I.: 0.07 to 0.32), but not inspiration ($\gamma = .05$, 95%C.I.: −0.03 to 0.19). The two-way interaction between perceived competence and morality was likewise indirectly related to role modeling through emulation ($\gamma = .03$, 95%C.I.: 0.00–0.09) and self-efficacy ($\gamma = .04$, 95% C.I.: 0.00–0.11), but not inspiration ($\gamma = .02$, 95%C.I.: −0.01 to 0.08). These results are therefore consistent with H4a and H4c, suggesting that workers are more likely to consider supervisors to be role models if they fulfill emulation and self-efficacy functions.

Exploratory analysis. We assessed the impact of supervisor perceived competence and morality on the exploratory measures using the OLS regression approach described above. These revealed highly consistent patterns of findings for negative modeling, $R^2 = .51$, $F(3,106) = 37.04$, $p < .001$, and supervisor endorsement, $R^2 = .62$, $F(3,106) = 57.18$, $p < .001$. In particular, participants were less likely to negatively model supervisors who were more competent or more moral, but they were most sensitive to the perceived competence of highly moral supervisors, all main effect and interaction $b \geq .27$, all $p \leq .001$. In a similar way, participants were more likely to endorse supervisors who were more competent or more moral, but they were most sensitive to the perceived competence of highly moral supervisors, all main effects and interaction $b \geq .24$, all $p \leq .001$.

In sum, these analyses suggest that the associations between supervisor perceived competence and morality extend to participants' ratings of their negative modeling and endorsement of their supervisors. Interestingly, moderate levels of perceived competence or morality were sufficient for negative modeling to

Table 5. Studies 2 and 3: Competence, morality, and role modeling dictionary

Category	Words
Moral	Just, fair, honest, considerate, trust[a], rely, reliable, integrity, ethic[a], right, responsible, principle[a], noble, upright, moral[a], dut[a], decent, worthy, honorable, truth[a], virtu[a], incorruptible, scrup[a], upstanding, upright, decent
Immoral	Unjust, unfair, dishonest, liar, inconsiderate, untrustworthy, unreliable, unethical, wrong, irresponsible, corrupt[a], dishonorable, disreputable, evil, fake, immoral, amoral, unprincipled, depraved, cheat[a], lie, two-fac[a], two-tim[a], crook[a], shady
Competent	Efficien[a], capable, able, competent, intelligent, clever, smart, hard work[a], knowledgeable, skill[a], proficien[a], qualified, bright, adroit[a], knowing, adept, experience[a], gift[a], talent[a], master[a], astute, brain[a], brilliant[a], expert[a], sharp[a], shrewd[a], quick
Incompetent	Inefficient, incompetent, stupid, unintelligent, foolish, simpl[a], incapable, inept, unable, unqualified, unskilled, inadequate, amateur[a], inadequate, ineffectual, inexperienced, useless, bungl[a], clumsy, flouder[a], inexper[a], untrained, unproficient, bumbl[a], unable, dud
Emulation	learn[a], emulat[a], follow, model, copy, taught, teach, footstep[a], path, mimc[a], imitat[a], mirror, replicat[a], reproduc[a], be like, train[a], absorb[a], comprehen[a], discover[a], understand[a], grasp[a], incorpor[a], ascertain, see, realiz[a], find, found
Inspiration	ambitio[a], aspir[a], motivat[a], pursue, inspir[a], drive[a], commit[a], desire, persist[a], want, dedicat[a], energi[a], mobili[a], strive, seek, struggle[a], try, want, wish[a], eager[a], attempt[a], endeavor[a], focus[a], purpos[a], determine[a], venture[a]
Self-Efficacy	Confiden[a], self-belief, self-effic[a], courag[a], bold[a], self-assure[a], self-reli[a], secur[a], fearless, unafraid, undaunted, assure[a], certain[a], self-confiden[a], self-possess[a], sure, dar[a], dauntless, intrepid
Acquisition	creat[a], finish, succeed, achieve[a], success[a], becom[a], promot[a], climb[a], win[a], attain[a], acquire[a], gain[a], obtain[a], accomplish[a], becam[a], earn[a], fulfil[a], complet[a], perform[a], produc[a], realiz[a], reach, advance[a], ahead, progress[a], raise, rise

Note: [a]Indicates that any word that includes this stem is counted.

occur. This suggests that the supervisors who do not have what it takes to be considered a role model are not neutral actors in the workplace. Instead, in line with the findings of Lockwood et al. (2002), workers actively attempt to follow a career trajectory and to engage in workplace behaviors that differ from those of supervisors they perceive as only moderately competent or moral. These findings also raise the possibility that supervisors who are perceived to help workers achieve their personal career goals may also be more successful at inducing workers to achieve the organization's goals.

In our final analysis, we examined the impact of supervisor attributes on the percentage of competence, morality, and role modeling-related words that participants used in their free responses to the career impact question. Word counts were calculated using Pennebaker, Booth, and Francis (2007) Linguistic Inquiry and Word Count software with construct dictionaries that we created for this purpose (see Table 5). None of the word categories showed any evidence of association with supervisor attributes, all $F(3,101) \leq 2.43$, $p \geq .070$.

Together, this study has provided further support for H1–H3, as well as partial support for H4. In our next study, we aim to go some way toward addressing the major limitation of our studies so far, which is our reliance on a correlational methodology. While it seems more plausible that supervisor attributes would cause role modeling than the reverse, it is possible that the observed associations are due to some unmeasured variable. Therefore, to provide evidence of causality, in Study 3 we experimentally manipulate the attributes of role occupants.

Study 3

Method

Participants. Participants with at least three years of work experience were invited to take part in a study on supervisors in the workplace. We retained our focus on real workplace relationships and used a critical incident approach with a sample of working adults recruited from the general population using Amazon's MTurk (Buhrmester, Kwang, & Gosling, 2011). Participants were reimbursed US$1 upon completion of the study. The initial sample consisted of 857 individuals who signaled interest in completing the questionnaire. In line with pre-specified requirements for participation (see https://osf.io/psyj6/), we excluded 180 participants who had fewer than 3 years of work experience, 76 participants who were not able to think of a supervisor with the specified characteristics, and 15 participants who failed to respond to two control questions as instructed (e.g., "This is a control question—please select '2'"). The questionnaire also included an additional (unintended) control question where, after reading through the person description, participants were asked to select the two traits specified in the description (from a list of four: "moral", "immoral", "competent", and "incompetent"). Although this was done for technical reasons (it allowed us to re-present the trait manipulation to participants at a later stage of the questionnaire), 89 participants failed this question. These participants (along with five responses that appeared to be duplicates) were also excluded. After exclusions, 492 participants fulfilled requirements for participation.[4] Sample demographics are provided in Table 2.

[4]Comparisons between participants who were included and those who were excluded for non-demographic reasons (while providing demographic data) indicated that the excluded sample may have been younger, $t(597) = 2.00$, $p = .046$ (excluded $M = 33.72$, $SD = 10.24$; included $M = 36.01$, $SD = 10.89$) and had fewer years of work experience, $t(599) = 1.97$, $p = .050$ (excluded $M = 13.73$, $SD = 8.63$; included $M = 15.74$, $SD = 9.88$). There was, however, no evidence that these samples differed in terms of gender, $\chi^2 = 1.46$, $p = .228$, work status, $\chi^2(1) = 0.05$, $p = .816$, or seniority $t(616) = -1.24$, $p = .215$.

Table 6. Study 3: Supervisor descriptions

Comp.	Moral	Description
High	High	A person who is both exceptionally capable at doing their job and embodies the highest ethical standards at work. If you were to describe this person, 'competent and moral' are two words that would come to mind. This person's competence may refer to the fact that this person has valuable knowledge, skills, or abilities. This person's morality may refer to the fact that this person is honest, trustworthy, or acts with integrity
High	Low	A person who is exceptionally capable at doing their job but is always willing to take ethical shortcuts at work. If you were to describe this person, 'competent but immoral' are two words that would come to mind. This person's competence may refer to the fact that this person has valuable knowledge, skills, or abilities. This person's immorality may refer to the fact that this person is dishonest, untrustworthy, or does not act with integrity
Low	High	A person who shows little aptitude for their job but embodies the highest ethical standards at work. If you were to describe this person, 'incompetent but moral' are two words that would come to mind. This person's incompetence may refer to the fact that this person lacks valuable knowledge, skills, or abilities. This person's morality may refer to the fact that this person is honest, trustworthy, or acts with integrity
Low	Low	A person who shows little aptitude for their job and is always willing to take ethical shortcuts at work. If you were to describe this person, 'incompetent and immoral' are two words that would come to mind. This person's incompetence may refer to the fact that this person lacks valuable knowledge, skills, or abilities. This person's immorality may refer to the fact that this person is dishonest, untrustworthy, or does not act with integrity

Procedure and measures. Participants were first randomly presented with one of four role occupant descriptions. These descriptions were constructed from the orthogonal manipulation of the occupant's competence (low or high) and morality (low or high; see Table 6). Participants were asked to consider the senior individuals with whom they had worked closely (supervisors, managers, team leaders, business owners, and so on), and to choose the individual who they felt came closest to matching this description. Participants were asked whether or not they were able to think of someone who closely matched the description; 76 participants indicated that they were not able to identify a suitable person, and they were funneled to a different questionnaire. The participants who remained were asked to describe the demographic characteristics of the identified individual and to provide a free response that explained the ways in which he or she matched the role occupant description.

Participants were then asked to respond to the measures of interest on identical 7-point Likert response scales (1 = *strongly disagree*; 7 = *strongly agree*). We again replaced "supervisor" in all items with the name that participants provided for this person. The measures included two manipulation check items —"[Supervisor] is moral at work (that is, honest, trustworthy, acts with integrity)" and "[Supervisor] is competent at work (that is, has valuable knowledge, skills, abilities)"—and the *role modeling* (α = .96), *emulation* (α = .95), *inspiration* (3-item scale α = .94), *self-efficacy* (α = .93), *negative modeling* (α = .95), and *endorsement* (α = .94) scales described in Study 2. Participants were also asked to respond to a variant of the Study 2 *career impact* item: "Imagine that you are given a prestigious award for lifetime career achievement. As part of this award, you are asked to make a speech. After giving your speech, a member of the audience says that they know you worked with [supervisor] at one point in your career. They ask what effect [supervisor] had on your career—if any. How would you respond to this question?"

Results and Discussion

Preliminary analysis. We again used confirmatory factor analysis to assess our conceptual four-factor model (see Table 4 for fit statistics). As in Study 2, the 18-item four factor model that excluded the two problematic inspiration items provided better fit for the data than the 20-item four factor model according to Akaike's Information Criterion. The fit indices for this model indicated marginal to good fit of the data; it also outperformed the 18-item single factor model, LR $\chi^2(6) = 2{,}055.39$, $p < .001$, and the 18-item two factor model, LR $\chi^2(5) = 645.46$, $p < .001$. As before, we used the 3-item version of the inspiration scale.[5]

Scale averages and bivariate correlations are presented in Table 7. In line with the previous studies, the bivariate correlations reveal moderate to strong positive associations between the measures. We again found some significant associations between the demographic characteristics of participants and their supervisors and role modeling ratings. Consistent with Study 2, we found that role modeling increased with participants' seniority (r = .20, p = .008) and was more likely for current supervisors (r = −.12, p = .009). Controlling for participant and supervisor demographic characteristics in the main analysis did not change the pattern of findings. Furthermore, with the exception of the length of participants' work experience, $F(1,477) = 4.46$, p = .035, the demographic

[5] The use of the 3-item inspiration scale involved a deviation from the preregistered analysis. Compared with the 3-item scale results reported here, the 5-item scale was more strongly associated with the other role modeling measures (*r*s .48–.78). Additionally, while the 3-item inspiration scale did not mediate the impact of supervisor attributes on role modeling, the 5-item inspiration scale did. Specifically, the indirect effect through inspiration was significant for morality (γ = .07, 95% C.I.: 0.01–0.14), competence (γ = .06, 95% C.I.: 0.01–0.11), and the two-way interaction (γ = .03, 95% C.I.: 0.01–0.07). The pattern of indirect effects through emulation and self-efficacy were unchanged.

Table 7. Studies 3 and 4: Scale means, standard deviations and bivariate correlations

Scales	Study 3 Mean [95% C.I.]	Study 4 Mean [95% C.I.]	1	2	3	4	5	6	7	8
1. Supervisor morality	4.35 (2.34) [4.14, 4.56]	4.16 (2.29) [3.94, 4.39]	—	.22	.70	.64	.41	.59	−.61	.74
2. Supervisor competence	4.49 (2.24) [4.29, 4.69]	4.46 (2.05) [4.27, 4.64]	.34	—	.57	.60	.41	.38	−.49	.54
3. Role modeling	3.04 (1.91) [2.88, 3.21]	3.40 (1.96) [3.19, 3.61]	—	—	—	.91	.63	.73	−.76	.88
4. Emulation	3.13 (1.82) [2.97, 3.29]	3.46 (1.81) [3.27, 3.66]	—	—	.93	—	.65	.73	−.73	.87
5. Inspiration	3.74 (1.84) [3.57, 3.90]	3.95 (1.68) [3.77, 4.13]	—	—	.58	.53	—	.76	−.43	.59
6. Self-efficacy	3.69 (1.73) [3.54, 3.85]	4.12 (1.47) [3.96, 4.28]	—	—	.53	.49	.74	—	−.53	.73
7. Negative modeling	4.88 (1.89) [4.71, 5.05]	—	—	—	—	—	—	—	—	−.75
8. Endorsement	3.21 (2.15) [3.12, 3.50]	—	—	—	—	—	—	—	—	—
9. Personal identification	—	3.25 (1.70) [3.07, 3.43]	—	—	.80	.79	.57	.55	—	—

Note: Study 3 correlations appear above the diagonal line, and Study 4 correlations below it. Study 3 $N = 492$; Study 4 attribute measures $N = 118$; Study 4 modeling measures $N = 335$; all correlations significant at $p < .01$.

characteristics were not statistically significant in the main analysis, all $F(1,477) \leq 2.55$, $p \geq .115$. For these reasons, the analysis that we report below did not contain the demographics.

Manipulation check. In order to ascertain that role occupant attributes were correctly manipulated, we first conducted a 2 (competence: low or high) × 2 (morality: low or high) between-participants Analysis of Variance (ANOVA) of participants' ratings of their supervisor's competence.[2] This revealed the expected main effect of competence, $F(1,488) = 2{,}513.63$, $p < .001$, $\eta^2 = .83$, such that participants rated managers in the competent conditions as more competent ($M = 6.50$, 95% C.I. 6.45–6.54) than those in the incompetent conditions ($M = 2.40$, 95% C.I. 2.33–2.47). There was also a significant (albeit, small) effect of morality, $F(1,488) = 9.03$, $p = .03$, $\eta^2 = .00$, such that participants rated supervisors in the moral conditions as more competent ($M = 4.79$, 95% C.I. 4.65–4.93) than those in the immoral conditions ($M = 4.18$, 95% C.I. 4.04–4.32). The interaction was not significant, $F(1,488) = 1.98$, $p = .161$, $\eta^2 = .00$.

Repeating this analysis for ratings of supervisor morality revealed the expected main effect of morality, $F(1,488) = 2{,}751.11$, $p < .001$, $\eta^2 = .85$, such that participants rated the supervisors in the moral conditions as more moral ($M = 6.48$, 95% C.I. 6.44–6.52) than supervisors in the immoral conditions ($M = 2.17$, 95% C.I. 2.10–2.24). There was a significant (but small) main effect of competence, $F(1,488) = 9.26$, $p = .002$, $\eta^2 = .00$, such that participants rated supervisors in the competent conditions as more moral ($M = 4.66$, 95% C.I. 4.51–4.81) than those in the incompetent conditions ($M = 4.03$, 95% C.I. 3.88–4.18). The interaction was not significant, $F(1,488) = 0.69$, $p = .406$, $\eta^2 = .00$.

The non-focal main effects that we observed are consistent with a halo effect. However, the very small size of these effects ($\eta^2 < .01$) together with very large size of the desired effects ($\eta^2 > .83$) suggests that these non-focal effects are not a matter of concern and that our manipulation was successful. (Indeed, testing our hypotheses with the manipulation checks as predictors of role modeling produced an identical pattern of findings). Importantly, unlike Study 1 and 2, we succeeded in eliciting ratings that were towards the lower end of the scales, which means that we are able to compare the role modeling of supervisors with low versus high attribute levels.

Main analysis. In order to test H1, H2, and H3, we repeated the ANOVA described above for participants' role model ratings (see Figure 4). In line with H1, there was a significant main effect of competence, $F(1,488) = 347.52$, $p < .001$, $\eta^2 = .22$, such that participants role modeled competent supervisors to a greater extent than incompetent supervisors. In line with H2, there was a significant main effect of morality, $F(1,488) = 637.67$, $p < .001$, $\eta^2 = .40$, such that participants role modeled moral supervisors to a greater extent than immoral supervisors. Importantly, in line with H3, there was a significant interaction between these variables, $F(1,488) = 132.97$, $p < .001$, $\eta^2 = .08$. To decompose this interaction, we examined the simple condition effects (see Table 8). These revealed that the positive effect of high (vs. low) competence on role modeling was almost ten times greater among moral supervisors, $F(1,488) = 480.63$, $p < .001$. $\eta^2 = .48$, than it was among their immoral counterparts, $F(1,488) = 26.23$, $p < .001$, $\eta^2 = .05$. In sum, results provide further evidence that role

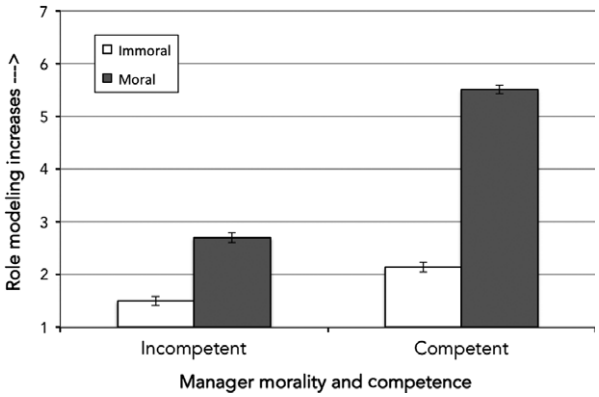

Fig. 4: Study 3: Role modeling ratings as a function of supervisor competence and morality

Note. Errors bars depict standard errors around cell means.

Table 8. Study 3: Means for supervisor ratings by condition

	Means (*SD*) [95% C.I.] for immoral supervisor		Means (*SD*) [95% C.I.] for moral supervisor	
Measures	Incompetent (*N* = 130)	Competent (*N* = 113)	Incompetent (*N* = 111)	Competent (*N* = 138)
Role modeling	1.45 (0.74) [1.33, 1.56]	2.11 (1.20) [1.89, 2.33]	2.72 (1.17) [2.51, 2.94]	5.52 (0.97) [5.36, 5.68]
Emulation	1.73 (0.89) [1.58, 1.89]	2.39 (1.21) [2.17, 2.62]	2.63 (1.20) [2.40, 2.84]	5.47 (0.91) [5.31, 5.62]
Inspiration	2.75 (1.65) [2.46, 3.03]	3.33 (1.71) [3.01, 3.64]	3.40 (1.55) [3.11, 3.69]	5.27 (1.28) [5.06, 5.49]
Self-efficacy	2.62 (1.51) [2.36, 2.88]	2.89 (1.48) [2.61, 3.16]	3.74 (1.37) [3.48, 3.99]	5.33 (0.96) [5.17, 5.49]
Negative modeling	6.14 (1.11) [5.94, 6.33]	5.76 (1.24) [5.53, 5.99]	5.28 (1.15) [5.07, 5.49]	2.66 (1.42) [2.42, 2.90]
Endorsement	1.51 (0.95) [1.35, 1.68]	2.19 (1.41) [1.93, 2.45]	3.18 (1.52) [2.90, 3.46]	6.03 (4.76) [5.90, 6.16]

occupants' competence has the strongest bearing on their capacity to act as role models when they are perceived to be moral.

Indirect effects analysis. To test H4, and our claim that the impact of supervisor attributes on role modeling would be mediated through the role modeling functions, we used Preacher and Hayes' (2008) approach for testing parallel indirect effects with 5,000 bootstrap samples (all predictors were mean-centered). We repeated this analysis for each of the three supervisor attribute predictors in turn; in each case, the two excluded non-focal attribute predictors (competence, morality and/or the two-way interaction) were included as covariates. Multicollinearity indices for this analysis were within the range considered broadly acceptable (VIF < 4.17). This revealed that the competence main effect had a significant indirect effect on role modeling through emulation (γ = .56, 95% bias corrected C.I.: 0.47 to 0.66), but not inspiration (γ = .01, 95% C.I.: −0.02 to 0.05) or self-efficacy (γ = .05, 95% C.I.: −0.01 to 0.09). The morality main effect also had a significant indirect effect through emulation (γ = .63, 95% C.I.: 0.55 to 0.73), but not inspiration (γ = .01, 95% C.I.: −0.03 to 0.05) or self-efficacy (γ = .09, 95% C.I.: −0.03 to 0.16). The two-way interaction likewise had a significant indirect effect through emulation (γ = .35, 95% C.I.: 0.28 to 0.43), but not inspiration (γ = .01, 95% C.I.: −0.01 to 0.02) or self-efficacy (γ = .03, 95% C.I.: −0.01 to 0.06). Together, this analysis provides further support for H4a; however, it provides little support for H4b or H4c.

Exploratory analyses. We repeated the ANOVA described in the main analysis with ratings of negative modeling and then supervisor endorsement (see Table 8). This revealed that participants were less likely to negatively model supervisors who were competent, $F(1,488) = 176.98$, $p < .001$, $\eta^2 = .17$, or moral, $F(1,488) = 307.79$, $p < .001$, $\eta^2 = .29$, or (especially) competent and moral, $F(1,488) = 98.95$, $p < .001$, $\eta^2 = .09$. In the same way, participants were more likely to endorse supervisors who were competent, $F(1,488) = 271.92$, $p < .001$, $\eta^2 = .18$, or moral, $F(1,488) = 661.73$, $p < .001$, $\eta^2 = .43$, or (especially) both, $F(1,488) = 102.97$, $p < .001$, $\eta^2 = .07$. This aligns with the Study 2 findings in showing that the impact of supervisor attributes extends beyond role modeling to negative modeling and endorsement.

We repeated this analysis for the percentage of words in participants' free responses to the career impact question that mapped onto the competence, morality, and role modeling dictionary categories using Pennebaker et al.'s (2007) Linguistic Inquiry and Word Count software (see Table 5). This analysis revealed significant effects of the supervisor attributes on participants' use of moral, competent, and inspiration words.

Considering participants' use of moral words, we found significant main effects of competence, $F(1,488) = 4.00$, $p = .046$, $\eta^2 = .01$, and morality, $F(1,488) = 19.49$, $p < .001$, $\eta^2 = .04$, as well as their interaction, $F(1,488) = 6.09$, $p = .014$, $\eta^2 = .01$. Decomposing the simple effects of this interaction revealed that participants used more moral words to describe incompetent supervisors if they were moral rather than immoral, $F(1,488) = 23.26$, $p < .001$, $\eta^2 = .04$. Surprisingly, however, participants used more moral words to describe moral supervisors if they were incompetent rather than competent, $F(1,488) = 10.08$, $p = .002$, $\eta^2 = .02$. (The other simple effects were not significant, $F(488) \leq 1.93$.)

We found a broadly similar pattern in participants' use of competent words. In particular, there was a main effect of competence, $F(1,488) = 13.20$, $p < .001$, $\eta^2 = .03$, that was conditioned by a significant interaction with morality, $F(1,488) = 16.20$, $p = .016$, $\eta^2 = .01$. The morality main effect was not significant, $F(1,488) = 1.52$, $p = .219$, $\eta^2 = .00$. Decomposing the interaction simple effects revealed that participants used more competent words to describe immoral supervisors if they were competent rather than incompetent, $F(1,488) = 18.14$, $p < .001$, $\eta^2 = .04$. Unexpectedly, participants used more competent words to describe competent supervisors if they were immoral rather than moral, $F(1,488) = 6.78$, $p = .010$, $\eta^2 = .01$. (The other simple effects were not significant, all $F(488) \leq 0.75$.)

Together, these findings suggest that when supervisors had a *single* positive attribute (either morality or competence), participants emphasized it in their descriptions. When supervisors had both positive attributes (and consequently were likely to be seen as a role model), participants did not focus on either of these. There is some evidence that when describing these supervisors, participants focused instead on their motivational effects. Specifically, there was a significant interaction between competence and morality on

participants' use of inspiration words, $F(1,488) = 5.92$, $p = .015$, $\eta^2 = .01$. Neither main effect was significant, $F(488) \leq 0.76$. Simple effects analysis suggests that participants used more inspiration words to describe supervisors who were both moral and competent than supervisors who either moral or competent, all $F(1,488) \geq 3.71$, $p \leq .055$, $\eta^2 = .01$. Therefore, these results suggest that supervisors' possession of the attributes that are associated with role modeling is accompanied by a shift in participants' descriptions from a (more distant) focus on the supervisors' attributes to a (closer) focus on their positive motivational effects on the self.

This study provides evidence that perceptions of a supervisor's competence and morality are likely to play a causal role in aspirants' role modeling. Together, then, the studies that we have presented so far provide support for our hypotheses in the context of long-lasting and intimate workplace relationships, where aspirants are able to develop a deep understanding of their supervisor's attributes, and where role modeling processes have time to develop and play out. However, while it is likely that role modeling is a process that (like career development in general) unfolds over time, it is nonetheless possible that aspirants may be able to anticipate such dynamics when meeting a new supervisor. To test the extent to which our findings generalize to new role occupants, in our fourth and final study, we asked participants to read about the behaviors of a hypothetical supervisor, where these behaviors either emphasized low or high levels of morality and competence, and to then indicate their belief that this supervisor would be a role model for them in their job.

In this final study, we also took the opportunity to conduct one more exploratory analysis that examined the role of identity processes in role modeling. There is ample evidence that identity processes are the basis for several important organizational behaviors (e.g., Lord & Brown, 2003; Sluss & Ashforth, 2007). Of particular relevance, some researchers have suggested that role modeling may be profitably examined from an identity perspective (e.g., Kelman, 1958). We explore the possibility that the act of incorporating a role occupant into the self-concept underpins the role modeling functions of emulation, inspiration, and self-efficacy. To do this, we also asked participants to indicate their personal identification with the supervisor.

Study 4

Method

Participants. Individuals who worked part- or full-time, were at least 20 years of age, resided in the US or UK and were registered with Prolific Academic were invited to take part in a study on supervisor perceptions in exchange for GBP0.50. Four hundred and seventy-five individuals expressed interest in participating (exceeding our minimum sample of 440). Of these, 10 did not meet the demographic requirements, 30 failed to respond to all of the key measures, and 100 failed one or more of the comprehension or attention checks. In line with pre-specified requirements (see https://osf.io/3vzc7/), these participants were excluded. Therefore, the final sample comprised 335 participants.[6] Sample demographics are provided in Table 2.

Procedure and measures. Participants were asked to imagine that they had just accepted a job at a new organization, and that their supervisor was a manager called Jean. To manipulate participants' impressions of Jean's morality and competence, we randomly presented them with one of four behavioral profiles in a 2 (morality: low or high) × 2 (competence: low or high) between-subjects design. Each profile consisted of 10 short behavioral descriptions. Five of these behaviors concerned Jean's morality, and they were varied to create an overall impression of low or high morality (e.g., by describing how the supervisor did or did not take credit for another person's work). The other five behaviors concerned Jean's competence, and these were also varied to create an overall impression of low or high competence (e.g., by describing her tendency to deliver projects under- or over-budget). Consequently, each of the four profiles contained five low (or high) morality behaviors as well as five low (or high) competence behaviors (all behaviors are presented in Table 9). To prevent order effects, the behaviors in each profile appeared in a random order with each presentation.

We used concrete behavioral descriptions to manipulate impressions of Jean because this allowed us to both (i) avoid any demand characteristics that may have accompanied the use of abstract attribute labels (e.g., "moral" or "incompetent") and (ii) remain true to the bottom-up processes that characterize impression formation in the workplace. It was, however, important to ascertain that these behavioral profiles manipulated perceptions of the supervisor's attributes in the desired ways. To do this, we ran first a pilot study that involved randomly presenting 118 US-based MTurk workers (55% men, 55% 25 to 34 years of age, 75% full-time employed) with one of the four behavioral profiles and then asking them to rate their impressions of Jean's morality ($\alpha = .98$) and competence ($\alpha = .97$) using the first three items of each of the scales described in Study 2 in exchange for US$1. Mean pilot ratings are presented in Table 10.

[6] Comparisons between participants who were included and those who were excluded for non-demographic reasons (while providing demographic data) indicated that the excluded sample may have been younger, $t(431) = -2.62$, $p = .009$ (excluded $M = 2.97$, $SD = 1.09$; included $M = 3.30$, $SD = 1.12$). There was, however, no evidence that these samples differed on the other measured demographics: education, $t(430) = -0.13$, $p = .899$, work status, $t(431) = -0.71$, $p = .479$, or gender, $\chi^2 = 3.47$, $p = .062$.

Table 9. Study 4: Supervisor profile behaviors

Item	High levels of morality/Competence	Low levels of morality/Competence
M1	Jean recently presented her team's design solution to the board of executives. When one of the design elements was widely praised by the board members, Jean was quick to say that Julian deserved all of the credit for it. It was, in fact, Julian's idea	Jean recently presented her team's design solution to the board of executives. When one of the design elements was widely praised by the board members, Jean claimed all the credit for it, even though it was in fact Julian's idea entirely
M2	There was an instance when Jean was appointed as the arbitrator of a confidential dispute between a junior colleague and her line manager. Around the same time, you overheard some employees she was friendly with asking her to confirm rumors about the junior colleague's complaint. She said that for reasons of confidentiality she was not able to discuss anything and changed the topic of conversation	There was an instance when Jean was appointed as the arbitrator of a confidential dispute between a junior colleague and her line manager. Around the same time, some employees she was friendly with asked her to confirm rumors about the junior colleague's complaint. While she said that for reasons of confidentiality she was not supposed to discuss anything, she proceeded to spill all the sensitive details at the heart of the complaint
M3	Jean was asked by the board to recommend which of two possible candidates should receive an internal promotion. One candidate was clearly superior. The other candidate was clearly less well suited for promotion but, unbeknownst to the board, he was a close personal friend of Jean's. Jean provided a very strong endorsement of the superior candidate	Jean was asked by the board to recommend which of two possible candidates should receive an internal promotion. One candidate was clearly superior. The other candidate was clearly less well suited for promotion but, unbeknownst to the board, he was a close personal friend of Jean's. Jean told the board that both candidates were well suited to the job, but that she was slightly more likely to endorse the candidate who was her friend
M4	Six months ago, Jean promised some colleagues that she would come into work on the weekend to give them much needed help preparing an urgent report. In the event, she turned up on both Saturday and Sunday, working late into the night, even though her sister was visiting unexpectedly from out of town	Six months ago, Jean promised some colleagues that she would join them at work over the weekend to give them much needed help preparing an urgent report. In the event, she did not turn up and did not respond to any of her colleagues' phone calls. When they asked her what had happened, she said that her sister had visited unexpectedly from out of town
M5	Five weeks ago, Jean went on a business trip overseas. Upon arriving at the hotel and paying the fare from the airport, her taxi driver asked what amount she would like him to write on the receipt. Jean asked the driver to write the amount on the meter on the receipt	Five weeks ago, Jean went on a business trip overseas. Upon arriving t the hotel and paying the fare from the airport, her taxi driver asked what amount she would like him to write on the receipt. Jean asked the driver to add 50% to the value of the fare, but gave the driver no tip
C1	Jean has been responsible for managing several big projects. At the beginning of a project, Jean takes some time to set realistic timeframes and create clear accountabilities for project contributors. Her projects often finish on time and budget	Jean has been responsible for managing several big projects. Jean spends little time considering time frames and discussing accountabilities with project contributors, preferring to let the project unfold naturally. Jean's projects consistently blow out time frames and budgets, often with substantial cost implications for the company
C2	On one occasion, one of the projects that Jean was responsible for was unexpectedly impacted by legislative changes. She was the first to understand the exact nature of the implications for the project and was able to provide strong direction for the new tasks that were necessary to meet the client deadline	There was a time when one of the projects Jean was responsible for was unexpectedly impacted by legislative changes. She never managed to understand the implications for the project and was not able to provide helpful direction about the new tasks that were necessary. A different manager had to be brought in at the last minute to save the project
C3	The organization makes occasional use of a rather advanced in-house tool for structural surveying purposes. Jean has used this tool many times in her years at the organization. When people encounter difficulties with this tool they almost always approach Jean for advice	The organization makes use of an advanced in-house tool for structural surveying purposes. Jean has tried to use this tool many times in her years at the organization but hardly ever successfully. When people encounter difficulties with this tool they will approach anyone other than Jean for advice
C4	Recently, there was a meeting where Jean was responsible for briefing the design architecture team about the overarching design principles for a new, and very innovative, product. In her briefing, Jean was highly effective at clarifying and prioritizing the main concepts and aims. As a result, the initial stages of product development proceeded unexpectedly smoothly	Recently, there was a meeting where Jean was responsible for briefing the design architecture team about the overarching principles for a very innovative new product. In her briefing, Jean introduced a great deal of confusion and misinformation regarding the main design concepts and aims. If another team member had not stepped in, the initial stages of product development would have been a failure
C5	Part of Jean's role in the company is to produce summary reports on business trends and markets for a portfolio of clients. All reports go through an editing process to verify the work for content and to check adherence to style guidelines. Jean's reports never have factual errors and omissions, and her reports are often used as the template for the company's style guidelines for external reports	Part of Jean's role in the company is to produce summary reports on business trends and markets for a portfolio of clients. All reports go through an editing process to verify the work for content and to check adherence to style guidelines. Jean's reports frequently have factual errors and omissions, and editors have repeatedly drawn her attention to violations of the company's style guidelines

Note: M, morality; C, competence.
Profiles were constructed through the orthogonal combination of the low and/or high attribute versions of each of the 10 behavior items.

Table 10. Study 4: Means for supervisor ratings by condition

	Means (*SD*) [95% C.I.] for immoral supervisor		Means (*SD*) [95% C.I.] for moral supervisor	
Measures Pilot study	Incompetent (*N* = 29)	Competent (*N* = 32)	Incompetent (*N* = 30)	Competent (*N* = 27)
Supervisor morality	1.75 (0.95) [1.29, 2.20]	2.78 (1.12) [2.34, 3.21]	5.73 (1.71) [5.28, 6.18]	6.40 (1.02) [5.92, 6.87]
Supervisor competence	2.16 (1.10) [1.80, 1.52]	5.97 (0.93) [5.63, 6.31]	3.22 (1.07) [2.87, 3.58]	6.49 (0.78) [6.12, 6.87]
Main study	(*N* = 88)	(*N* = 75)	(*N* = 85)	(*N* = 87)
Role modeling	1.31 (0.47) [1.08, 1.54]	2.88 (1.37) [2.63, 3.13]	3.62 (1.31) [3.38, 3.85]	5.76 (1.06) [5.53, 5.99]
Emulation	1.52 (0.58) [1.31, 1.74]	3.23 (1.20) [3.00, 3.46]	3.43 (1.17) [3.21, 3.65]	5.66 (1.02) [5.45, 5.87]
Inspiration	3.31 (1.62) [2.97, 3.65]	3.47 (1.47) [3.13, 3.80]	3.76 (1.42) [3.45, 4.06]	5.20 (1.50) [4.89, 5.52]
Self-efficacy	3.61 (1.49) [3.32, 3.90]	3.81 (1.36) [3.50, 4.12]	4.01 (1.25) [3.72, 4.31]	5.01 (1.36) [4.73, 5.30]
Personal identification	1.80 (1.11) [1.53, 2.07]	2.71 (1.28) [2.42, 3.00]	3.68 (1.25) [3.41, 3.95]	4.76 (1.36) [4.49, 5.03]

To examine participants' perceptions of Jean's morality, we ran a 2 (morality: low or high, between) × 2 (competence: low or high, between) ANOVA. This revealed the expected main effect of morality, $F(1,114) = 275.27$, $p < .001$, $\varepsilon^2 = .68$, such that the immoral profiles were rated as less moral ($M = 2.29$, $SD = 1.16$) than moral ones ($M = 6.05$, $SD = 1.45$), and a substantially smaller main effect of competence, $F(1,114) = 13.60$, $p < .001$, $\varepsilon^2 = .03$, such that the incompetent profiles were rated as less moral ($M = 3.77$, $SD = 2.44$) than competent ones ($M = 4.43$, $SD = 2.11$); the interaction was not significant, $F(1,114) = 0.64$, $p = .425$, $\varepsilon^2 = .00$. Repeating this analysis for perceptions of the supervisor's competence revealed the expected main effect of competence, $F(1,114) = 382.65$, $p < .001$, $\varepsilon^2 = .74$, such that the incompetent profiles were rated as less competent ($M = 2.70$, $SD = 1.10$) than the competent ones ($M = 6.21$, $SD = 0.90$) and a substantially smaller main effect of morality, $F(1,114) = 19.21$, $p < .001$, $\varepsilon^2 = .04$, such that immoral profiles were rated as less competent ($M = 4.16$, $SD = 2.17$) than moral ones ($M = 4.77$, $SD = 1.89$); the interaction was not significant, $F(1,114) = 2.20$, $p = .141$, $\varepsilon^2 = .00$. Together, these analyses show that the behaviors were successful at manipulating the targeted attributes. As in Study 3, the observed halo effect is relatively small.

Once participants in the main study had read through their assigned profile, they were asked to reflect on what they thought working with Jean would be like and then respond to slightly amended versions of the *role modeling* ($\alpha = .97$), *emulation* ($\alpha = .94$), *inspiration* (3-item scale $\alpha = .90$), and *self-efficacy* ($\alpha = .92$) scales described in the previous studies. In particular, in line with our request that participants anticipate what they think working with Jean *would be like*, we expressed the items in the future tense (e.g., "I will consider Jean to be a role model in my life"; "I will model my work behaviors on those of Jean"; and so on).

To address our exploratory question of whether learning that Jean was moral and competent increased role modeling because it facilitated participants' personal identification with her, we also asked participants to complete a personal identification scale. This was an adapted version of Sluss, Ployhart, Cobb, and Ashforth's (2012) four-item measure of relational identification ($\alpha = .93$): "Jean will be an important part of who I am at work", "If someone criticizes Jean, it will feel like a personal insult", "Jean will be vital to the kind of person I am at work", "Jean will be important to my self-image at work".

Results and Discussion

Preliminary analysis. We used confirmatory factor analysis to assess whether our conceptual model provided a good fit of the data (see Table 4 for fit statistics). In line with the previous studies, the 18-item four factor model that excluded the two problematic inspiration items outperformed the 20-item four factor model according to Akaike's Information Criterion. This model also provided marginal to good fit of the data, and outperformed the 18-item single factor model, LR $\chi^2(6) = 1{,}819.73$, $p < .001$, as well as the 18-item two factor model, LR $\chi^2(5) = 399.81$, $p < .001$. Therefore, as before, we used the 3-item version of the inspiration scale.[7]

Scale averages and bivariate correlations are presented in Table 7. In line with the previous studies, the bivariate correlations reveal moderate to strong associations between the measures. Of the demographic characteristics, only participants' education was significantly (and negatively) associated with role modeling, $r = -.15$, $p = .006$. As education was not a significant covariate in the main analysis, $F(1,330) = 0.75$, $p = .388$, we excluded it in the analysis reported below.

[7]The use of the 3-item inspiration scale involved a deviation from the preregistered analysis. Compared with the 3-item scale results reported here, the 5-item scale was more strongly associated with the other role modeling measures (*r*s .71–.76). However, like the 3-item scale, the 5-item scale had significant indirect effect for competence ($\gamma = .12$, 95% C.I.: 0.06–0.19), morality ($\gamma = .16$, 95% C.I.: 0.08–0.25) and the two-way interaction ($\gamma = .05$, 95% C.I.: 0.02–0.10). The pattern of indirect effects through emulation and self-efficacy were unchanged.

Main analysis. In order to test H1, H2, and H3, we ran a 2 (morality: low or high, between) × 2 (competence: low or high, between) ANOVA of role model ratings (see Table 10 for condition means). In line with H1, there was a significant main effect of competence, $F(1,331) = 238.67$, $p < .001$, $\eta^2 = .23$, such that participants were more likely to role model Jean if she was competent rather than incompetent. In line with H2, there was also a significant main effect of morality, $F(1,331) = 467.06$, $p < .001$, $\eta^2 = .45$, such that participants were more likely to role model Jean if she was moral rather than immoral. Importantly, in line with H3, there was a significant interaction between these variables, $F(1,331) = 5.72$, $p = .017$, $\eta^2 = .01$. To decompose this interaction, we examined the simple condition effects. These revealed that the positive effect of high (vs. low) competence on role modeling was 1.65 times greater when the supervisor was moral, $F(1,331) = 164.08$, $p < .001$, $\eta^2 = .33$, than when she was immoral, $F(1,331) = 82.76$, $p < .001$, $\eta^2 = .20$. In sum, results provide further evidence that a supervisor's competence has a stronger bearing on her capacity to act as a role model when she is perceived to be moral.

Indirect effects analysis. To test H4, and our claim that the impact of supervisor attributes on role modeling would be mediated through the role modeling functions, we again used Preacher and Hayes' (2008) approach for testing parallel indirect effects with 5,000 bootstrap samples (predictors were mean-centered). We repeated this analysis for each of the three supervisor attribute predictors; in each case, the two excluded non-focal attribute predictors were included as covariates. Multicollinearity indices were within the range considered acceptable by most authors (all VIF < 3.44; see Menard, 1995; Kennedy, 1992). This revealed that the competence main effect had significant indirect effects on role modeling through emulation ($\gamma = .75$, 95% bias corrected C.I.: 0.69 to 0.94) and inspiration ($\gamma = .04$, 95% C.I.: 0.01 to 0.08), but not self-efficacy ($\gamma = .02$, 95% C.I.: −0.00 to 0.05). The morality main effect also had significant indirect effects through emulation ($\gamma = .82$, 95% C.I.: 0.70 to 0.94) and inspiration ($\gamma = .05$, 95% C.I.: 0.02 to 0.08), but not self-efficacy ($\gamma = .03$, 95% C.I.: −0.00 to 0.07). The two-way interaction likewise had significant indirect effects through emulation ($\gamma = .10$, 95% C.I.: 0.01 to 0.18) and inspiration ($\gamma = .03$, 95% C.I.: 0.01 to 0.07), but not self-efficacy ($\gamma = .00$, 95% C.I.: −0.00 to 0.04). Together, this analysis provides support for H4a and H4b.

Exploratory analyses. We repeated the indirect effects analysis described above to see whether the act of incorporating a role occupant into the self-concept underpins the impact of the occupant's attributes on the role modeling functions of emulation, inspiration, and self-efficacy (the non-focal attribute factors were included as covariates). This revealed significant indirect effects of supervisor morality through personal identification to emulation ($\gamma = .49$, 95% C.I.: 0.39 to 0.60), inspiration ($\gamma = .51$, 95% C.I.: 0.37 to 0.66), and self-efficacy ($\gamma = .49$, 95% C.I.: 0.36 to 0.63). These analyses also revealed significant indirect effects of supervisor competence through personal identification to emulation ($\gamma = .25$, 95% C.I.: 0.17 to 0.34), inspiration ($\gamma = .25$, 95% C.I.: 0.17 to 0.37), and self-efficacy ($\gamma = .25$, 95% C.I.: 0.16 to 0.34). There was, however, no evidence of any significant indirect effect of the two-way interaction through personal identification for emulation ($\gamma = .02$, 95% C.I.: −0.04 to 0.09), inspiration ($\gamma = .02$, 95% C.I.: −0.05 to 0.10), or self-efficacy ($\gamma = .02$, 95% C.I.: −0.05 to 0.09).

Finally, we assessed whether personal identification was a significant mediator of the impact of the role occupant's attributes on role modeling over and above the three role modeling functions. To run these analyses, we included the four mediators in parallel and the non-focal attribute factors as covariates. This revealed that over and above the indirect effects through emulation and inspiration there were significant indirect effects of the competence and morality main effects on role modeling through personal identification ($\gamma = .06$, 95% C.I.: 0.01 to 0.12 and $\gamma = .05$, 95% C.I.: 0.01 to 0.10, respectively). There was again no evidence that the two-way interaction had a significant indirect effect on role modeling through personal identification ($\gamma = .01$, 95% C.I.: −0.01 to 0.03). In sum, these analyses are consistent with the possibility that incorporating a role occupant into one's sense of self may underpin the functions of emulation, inspiration, and self-efficacy, and, to a smaller extent, the perception that this occupant is a role model.

General Discussion

In the role modeling literature to date, there has been a tendency to limit the theoretical and empirical analysis to would-be role models' competence. This has been associated with a tendency to focus on the capacity for highly competent and successful individuals to be role models for others (e.g., Aronson et al., 2009; Hoyt, 2013; Lockwood, 2006; Marx et al., 2009). This approach is apparent in the social comparison literature too, where researchers have tended to focus on the "vertical" dimension of competence or status (Locke, 2005; although see Monin, 2007). Although there is good reason to believe that competence is important for role modeling (as the present results show too), the person perception literature provides a very strong basis for expecting that perceived morality is likely to be as important as perceived competence for individuals' capacity to be seen as role models (e.g., Abele & Wojciszke, 2014; Wojciszke, 2005).

Consistent with our hypotheses (H1 and H2), field and experimental evidence from four studies indicates that the extent to which participants see their supervisor as a role model (or consider a new supervisor as a

potential role model) is determined by a person's perceived morality as well as his or her perceived competence. In particular, we found that people were most sensitive to a role occupant's perceived competence when this occupant was also perceived to be moral (H3). These studies provide strong support for Casciaro and Sousa Lobo's (2008) claim that people consider social concerns even in explicitly task-oriented, organizational settings (see also Pagliaro et al., 2013; van Prooijen et al., 2016).

An additional aim in this article was to articulate and explore three potential role model functions: emulation, inspiration, and self-efficacy. Although these functions are frequently mentioned in the role model literature and formally articulated in the motivational theory of role modeling (Morgenroth et al., 2015), there are a limited number of studies that have assessed their importance in role modeling. For instance, the social psychological literature has tended to investigate the impact of exposure to competent occupants on people's performance, motivation, and self-concept, but without checking whether or not these occupants are actually seen as role models (e.g., Cheryan, Siy, Vichayapai, Drury, & Kim, 2011; Hoyt, 2013; Lockwood, 2006; Marx & Goff, 2005; McIntyre et al., 2011; Rosenthal et al., 2013). Consequently, this literature has provided little evidence that these functions are specific to people's role models.

Our expectation—as captured in H4—was that the three role model functions would mediate between the role occupant attributes and role modeling. In other words, we expected that people would emulate managers whom they perceive to be moral and competent, would find them inspiring, and would feel bolstered in terms of their self-efficacy, and that these experiences in turn would foster aspirants' perception that these managers were personal role models. The pattern of findings in Studies 2, 3, and 4 is consistent with the possibility that supervisors who are perceived to be competent and moral are considered to be role models because they fulfill the emulation function (that is, they satisfy workers' desire for a model whom they could copy in their efforts to master their role). The evidence for the mediating role of inspiration and self-efficacy functions was weaker (with each indirect effect only achieving significance in one of the three studies). This suggests that workers may be most concerned about their role model's capacity to fulfill the emulation function, and choose their role models on that basis.

Exploratory analyses in Study 3 also revealed some differences in the statements that participants made about the impact that their supervisor had on their career as a function of the supervisor's perceived morality and competence. Somewhat unexpectedly, there was evidence that participants made the most frequent reference to a supervisor's moral attributes when the supervisor was perceived to be moral but incompetent. This pattern emerged for competence too, as participants made the most frequent reference to a supervisor's competent attributes when the supervisor was perceived to be competent but immoral. This may reflect people's desire to mention some favorable attribute in a person they have worked with (at least where there is one to acknowledge; for related findings see Bergsieker, Leslie, Constantine, & Fiske, 2012). Especially intriguing is the finding that the best supervisors—those who were perceived to be competent as well as moral—were not described as such. Our analysis provides some evidence that, here, participants focused instead on supervisors' inspirational impact. This alludes to a qualitative shift in mindset from one of "cold" appraisal to one of "hot" influence and may provide evidence that competent and moral supervisors have some beneficial impact on their subordinates. However, other explanations may also be viable here, including the possibility that forming an impression of supervisors with mixed attributes requires greater cognitive elaboration, rendering the attributes more memorable and thus reproducible on demand.

As a further exploratory test, we also examined the possibility articulated by Kelman (1958); see also Ashforth et al., 2016; Bandura, 1969) that role modeling is a process of personal identification, which suggests that there could be traction in considering role modeling as a form of identity-based influence. This possibility receives support from research in the organizational domain that has shown that workers' personal identification with leaders mediates a range of important organizational outcomes, including respect (van Quaquebeke, van Knippenberg, & Eckloff, 2011), organizational socialization (Sluss & Ashforth, 2007), and perceptions of a leader's charisma (Steffens, Haslam, & Reicher, 2014). Study 4 was generally consistent with this possibility, as it showed that the supervisor's morality and competence (although not the interaction between these factors) had significant indirect relationships with the three role modeling functions through personal identification. Thus, these results provide initial evidence that there may be value in further exploring the importance of identification with a role occupant for role modeling and role acquisition.

Limitations and Future Research

While our studies have a number of strengths (including the use of diverse complementary methods, high statistical power, and pre-registration) it is important to acknowledge their limitations. For one, we focused on role modeling processes as they occur in the context of close and ongoing occupational interactions, although there is evidence that role models can be found outside of this domain. For instance, some people do appear to model themselves on very distant individuals (such as film or sports stars) as well as fictitious characters. While the role modeling literature has not distinguished between these different types of

role models, it seems that they may serve somewhat different functions—among other things, it is difficult to emulate a person if their role-related behaviors are not observable (this observation is particularly important in light of the consistent indirect effects for emulation). It is also the case that perceived morality may be particularly important in supervisory relationships because working under a moral supervisor is likely to be substantially more pleasant and to provide greater career development than working under an immoral supervisor (this possibility receives support in the form of strong positive associations between role modeling and supervisor endorsement ratings across the three studies). If all one gets to see is the image of success (rather than a person's behaviors as they work to attain it), perceived morality may be less important.

Another consideration relates to our mediational analysis (represented by H4), as while the data provided partial support for our expectations they are not able to rule out alternative causal pathways (Fiedler, Schott, & Meiser, 2011; Kline, 2015). It is, for instance, possible that the high associations between people's willingness to subjectively experience someone as a role model and endorse the role modeling functions is a reflection of people's inclusion of these functions in their definition of role models. It is also possible that role model perceptions are antecedents to the functions, rather than consequences of them. Because it is not possible to disentangle these alternative models analytically in the current data, there would be a great deal of value in testing the current expectations in longitudinal and multi-level samples.

Finally, given our selective focus on two of the four major person perception sub-dimensions, it is important to be cautious in assuming that our findings speak to the *specific* impact of these sub-dimensions rather than the omitted highly related dimensions of assertiveness and sociability. Indeed, although the existing literature provides a strong basis for expecting that perceived morality is particularly important, it is possible that our findings point to the more general importance of agency and communality perceptions in role modeling. To establish whether perceived competence and morality are indeed uniquely important for role modeling, it is important that future work also measure assertiveness and sociability perceptions.

Conclusion

In this article, we have sought to address the relative lack of attention that has been directed towards morality in the role modeling literature (for a notable exception, see Fuesting & Diekman, 2017). Specifically, we have argued that whether people respond to a role occupant's perceived competence will be conditioned by perceptions of his or her morality. In line with this, across four studies, results showed that perceptions of a role occupant's morality are indeed critical for role modeling—it is when would-be role models are seen as decent and virtuous that their ability and competence makes people want to follow their footsteps. Thus, it appears that people do not blindly follow extraordinary ability and success but respond with reference to the moral character that accompanies it.

Conflict of Interest

The authors confirm they have no conflict of interest to declare. Authors also confirm that this article adheres to ethical guidelines specified in the APA Code of Conduct as well as the authors' national ethics guidelines.

References

Abele, A. E., Hauke, N., Peters, K., Louvet, E., Szymkow, A., & Duan, Y. (2016). Facets of the fundamental content dimensions: Agency with competence and assertiveness—Communion with warmth and morality. *Frontiers in Psychology*, *7*, 1810.

Abele, A. E., & Wojciszke, B. (2014). Communal and agentic content in social cognition: A dual perspective model. *Advances in Experimental Social Psychology*, *50*, 195–255. https://doi.org/10.1016/b978-0-12-800284-1.00004-7

Addis, A. (1996). Role models and the politics of recognition. *University of Pennsylvania Law Review*, *144*(4), 1377–1468. https://doi.org/10.2307/3312617

Aronson, J., Jannone, S., McGlone, M., & Johnson-Campbell, T. (2009). The Obama effect: An experimental test. *Journal of Experimental Social Psychology*, *45*(4), 957–960. https://doi.org/10.1016/j.jesp.2009.05.006

Ashforth, B. E. (2001). *Role transitions in organizational life: An identity-based perspective*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ashforth, B. E., Schinoff, B. S., & Rogers, K. M. (2016). "I identify with her", "I identify with him": Unpacking the dynamics of personal identification in organizations. *Academy of Management Review*, *41*(1), 28–60. https://doi.org/10.5465/amr.2014.0033

Bandura, A. (1969). Social-learning theory of identifactory processes. In D. A. Goslin (Ed.), *Handbook of socialisation theory and research* (pp. 213–262). Chicago, IL: Rand McNally & Company.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

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

Bergsieker, H. B., Leslie, L. M., Constantine, V. S., & Fiske, S. T. (2012). Stereotyping by omission: Eliminate the negative, accentuate the positive. *Journal of Personality and Social Psychology*, *102*(6), 1214–1238. https://doi.org/10.1037/a0027717

Blanton, H., Buunk, B. P., Gibbons, F. X., & Kuyper, H. (1999). When better-than-others compare upward: Choice of comparison and comparative evaluation as independent predictors of academic performance. *Journal of Personality and Social Psychology*, *76*(3), 420–430. https://doi.org/10.1037/0022-3514.76.3.420

Bounoua, L., Cury, F., Regner, I., Huguet, P., Barron, K. E., & Elliot, A. J. (2012). Motivated use of information about others: Linking the 2×2 achievement goal model to social comparison propensities and processes. *British Journal of Social Psychology*, *51*(4), 626–641. https://doi.org/10.1111/j.2044-8309.2011.02027.x

Brambilla, M., Rusconi, P., Sacchi, S., & Cherubini, P. (2011). Looking for honesty: The primary role of morality (vs. socialbility and competence) in information gathering. *European Journal of Social Psychology*, *41*, 135–143. https://doi.org/10.1002/ejsp.744

Brambilla, M., Sacchi, S., Ruschoni, P., Cherubini, P., & Yzerbyt, V. Y. (2012). You want to give a good impression? Be honest! Moral traits dominate group impression formation. *British Journal of Social Psychology*, *51*, 149–166. https://doi.org/10.1111/j.2044-8309.2010.02011

Brown, M., & Trevino, L. (2014). Do role models matter? An investigation of role modeling as an antecedent of perceived ethical leadership. *Journal of Business Ethics*, *122*, 587–598. https://doi.org/10.1007/s10551-013-1769-0

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, *6*(1), 3–5. https://doi.org/10.1177/1745691610393980

Buunk, A., & Gibbons, F. (2007). Social comparison: The end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes*, *102*, 3–21. https://doi.org/10.1016/j.obhdp.2006.09.007

Buunk, B. P., & Ybema, J. F. (1997). Social comparisons and occupational stress: The identification-contrast model. In B. Buunk & F. X. Gibbons (Eds.), *Health, coping and well-being: Perspectives from social comparison theory* (pp. 359–388). Mahwah, NJ: Lawrence Erlbaum.

Cameron, A. C., & Trivedi, P. K. (2010). *Microeconometrics using stata*, Vol. *2*. College Station, TX: Stata Press.

Casciaro, T., & Sousa Lobo, M. (2008). When competence is irrelevant: The role of interpersonal affect in task-related ties. *Administrative Science Quarterly*, *53*, 655–684. https://doi.org/10.2189/asqu.53.4.655

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods*, *4*(1), 62–83. https://doi.org/10.1177/109442810141004

Cheryan, S., Siy, J., Vichayapai, M., Drury, B., & Kim, S. (2011). Do female and male role models who embody STEM stereotypes hinder women's anticipated success in STEM? *Social Psychological and Personality Science*, *2*, 656–664.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Coltrin, S., & Glueck, W. F. (1977). The effect of leadership roles on the satisfaction and productivity of university research professors. *Academy of Management Journal*, *20*(1), 101–116. https://doi.org/10.2307/255465

Cotton, R. D., Shen, Y., & Livne-Tarandach, R. (2011). On becoming extraordinary: The content and structure of the developmental networks of Major League Baseball Hall of Famers. *Academy of Management Journal*, *54*(1), 15–46. https://doi.org/10.5465/amj.2011.59215081

Dijkstra, P., Kuyper, H., van der Werf, G., Buunk, A. P., & van der Zee, Y. G. (2008). Social comparison in the classroom: A review. *Review of Educational Research*, *78*(4), 828–879. https://doi.org/10.3102/0034654308321210

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140. https://doi.org/10.1177/001872675400700202

Fiedler, K., Schott, M., & Meiser, T. (2011). What mediation analysis can (not) do. *Journal of Experimental Social Psychology*, *47*(6), 1231–1236. https://doi.org/10.1016/j.jesp.2011.05.007

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*, 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Flanagan, J. (1954). The critical incident technique. *Psychological Bulletin*, *51*, 327–358.

Fuesting, M. A., & Diekman, A. B. (2017). Not by success alone: Role models provide pathways to communal opportunities in STEM. *Personality and Social Psychology Bulletin*, *43*, 163–176. https://doi.org/10.1177/0146167216678857

Gibson, D. (2003). Developing the professional self-concept: Role model construals in early, middle and late career stages. *Organization Science*, *14*(5), 591–610. https://doi.org/10.1287/orsc.14.5.591.16767

Goodwin, G. P., Piazza, J., & Rozin, P. (2014). Moral character predominates in person perception and evaluation. *Journal of Personality and Social Psychology*, *106*(1), 148–168. https://doi.org/10.1037/a0034726

Haslam, S. A., Reicher, S. D., & Platow, M. J. (2011). *The new psychology of leadership: Identity, influence and power*. London: Psychology Press.

Hoyt, C. (2013). Inspirational or self-deflating: The role of self-efficacy in elite role model effectiveness. *Social Psychology and Personality Science*, *4*, 290–298. https://doi.org/10.1177/1948550612455066

Hoyt, C. L., & Simon, S. (2011). Female leaders: Injurious or inspiring role models for women? *Psychology of Women Quarterly*, *35*(1), 143–157.

Huguet, P., Dumas, F., Monteil, J. M., & Genestoux, N. (2001). Social comparison choices in the classroom: Further evidence for students' upward comparison tendency and its beneficial impact on performance. *European Journal of Social Psychology*, *31*(5), 557–578. https://doi.org/10.1002/(issn)1099-0992

Ibarra, H. (1999). Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly*, *44*(4), 764–791. https://doi.org/10.2307/2667055

Ibarra, H., & Petriglieri, J. L. (2008). *Impossible selves: Image strategies and identity threat in professional women's career transitions*. https://sites.insead.edu/facultyresearch/research/doc.cfm?did=18696

Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*, Vol. *2* (p. 528). New York, NY: Wiley.

Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change.

Journal of Conflict Resolution, *2*, 51–60. https://doi.org/10.1177/002200275800200106

Kemper, T. (1968). Reference groups, socialization and achievement. *American Sociological Review*, *33*(1), 31–45. https://doi.org/10.2307/2092238

Kennedy, P. (1992). *A guide to econometrics*. Oxford: Blackwell.

Kline, R. B. (2015). The mediation myth. *Basic and Applied Social Psychology*, *37*(4), 202–213. https://doi.org/10.1080/01973533.2015.1049349

Leach, C. W., Ellemers, N., & Barreto, M. (2007). Group virtue: The importance of morality (vs. competence and sociability) in the positive evaluation of in-groups. *Journal of Personality and Social Psychology*, *93*, 234–249. https://doi.org/10.1037/0022-3514.93.2.234

Locke, K. (2005). Connecting the horizontal dimension of social comparison with self-worth and self-confidence. *Personality and Social Psychology Bulletin*, *31*(6), 795–803. https://doi.org/10.1177/0146167204271634

Lockwood, P. (2006). "Someone like me can be successful": Do college students need same-gender role models? *Psychology of Women Quarterly*, *30*, 36–46. https://doi.org/10.1111/j.1471-6402.2006.00260.x

Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, *83*(4), 854. https://doi.org/10.1037/0022-3514.83.4.854

Lockwood, P., & Kunda, Z. (1997). Superstars and me: Predicting the impact of role models on the self. *Journal of Personality and Social Psychology*, *77*(1), 98–103.

Lord, R. G., & Brown, D. J. (2003). *Leadership processes and follower self-identity*. Mahwah, New Jersey: Psychology Press.

Marx, D. M., & Goff, P. A. (2005). Clearing the air: The effect of experimenter race on target's test performance and subjective experience. *British Journal of Social Psychology*, *44*(4), 645–657. https://doi.org/10.1348/014466604x17948

Marx, D. M., Ko, S. J., & Friedman, R. A. (2009). The "Obama effect": How a salient role model reduces race-based performance differences. *Journal of Experimental Social Psychology*, *45*(4), 953–956. https://doi.org/10.1016/j.jesp.2009.03.012

McIntyre, R., Paulson, R., Taylor, C., Morin, A., & Lord, C. (2011). Effects of role model deservingness on overcoming performance deficits induced by stereotype threat. *European Journal of Social Psychology*, *41*, 301–311. https://doi.org/10.1002/ejsp.774

Menard, S. (1995). *Applied logistic regression analysis: Sage University Series on Qualitative applications in the social sciences*. Thousand Oaks, CA: Sage.

Monin, B. (2007). Holier than me? Threatening social comparison in the moral domain. *Revue Internationale de Psychologie Sociale*, *20*(1), 53–68.

Morgenroth, T., Ryan, M. K., & Peters, K. (2015). The motivational theory of role modeling: How role models influence role aspirants' goals. *Review of General Psychology*, *19*(4), 465–483. https://doi.org/10.1037/gpr0000059

Nauta, M. M., & Kokaly, M. L. (2001). Assessing role model influences on students' academic and vocational decisions. *Journal of Career Assessment*, *9*(1), 81–99. https://doi.org/10.1177/106907270100900106

Pagliaro, S., Brambilla, M., Sacchi, S., D'Angelo, M., & Ellemers, N. (2013). Initial impressions determine behaviours: Morality predicts the willingness to help newcomers. *Journal of Business Ethics*, *117*(1), 37–44. https://doi.org/10.1007/s10551-012-1508-y

Paice, E., Heard, S., & Moss, F. (2002). How important are role models in making good doctors? *British Medical Journal*, *325*(7366), 707–710. https://doi.org/10.1136/bmj.325.7366.707

Peeters, G. (1992). Evaluative meanings of adjectives in vitro and in context: Some theoretical implications and practical consequences of positive-negative asymmetry and behavioural-adaptive concepts of evaluation. *Psychologica Belgica*, *32*, 211–231.

Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). *Linguistic inquiry and word count: LIWC [Computer software]*. Austin, TX: liwc. net.

Peters, K., & Bentley, S. (2017). *Dead end or stepping stone: Identity construction and role modelling in the PhD*. University of Queensland.

Phalet, K., & Poppe, E. (1997). Competence and morality dimensions of national and ethnic stereotypes: A study in six eastern-European countries. *European Journal of Social Psychology*, *27*(6), 703–723. https://doi.org/10.1002/(sici)1099-0992(199711/12)27:6<703::aid-ejsp841>3.0.co;2-k

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. https://doi.org/10.3758/brm.40.3.879

van Prooijen, A. M., & Ellemers, N. (2015). Does it pay to be moral? How indicators of morality and competence enhance organizational and work team attractiveness. *British Journal of Management*, *26*(2), 225–236. https://doi.org/10.1111/1467-8551.12055

van Prooijen, A. M., Ellemers, N., van der Lee, R., & Scheepers, D. T. (2016). What seems attractive may not always work well: Evaluative and cardiovascular responses to morality and competence levels in decision-making teams. *Group Processes & Intergroup Relations*, *21*, 73–87.

van Quaquebeke, N., van Knippenberg, D., & Eckloff, T. (2011). Individual differences in the leader categorization to openness to influence relationship: The role of followers' self-perception and social comparison orientation. *Group Processes & Intergroup Relations*, *14*(5), 605–622. https://doi.org/10.1177/1368430210391311

Quimby, J., & DeSantis, A. (2006). The influence of role models on women's career choices. *The Career Development Quarterly*, *54*(4), 297–306. https://doi.org/10.1002/(issn)2161-0045

Rich, G. A. (1997). The sales manager as a role model: Effects on trust, job satisfaction, and performance of salespeople. *Journal of the Academy of Marketing Science*, *25*(4), 319–328. https://doi.org/10.1177/0092070397254004

Rosenthal, L., Levy, S., London, B., Lobel, M., & Bazile, C. (2013). In pursuit of the MD: The impact of role models, identity compatibility and belonging among undergraduate women. *Sex Roles*, *68*(7–8), 464–473. https://doi.org/10.1007/s11199-012-0257-9

Sluss, D. M., & Ashforth, B. E. (2007). Relational identity and identification: Defining ourselves through work relationships. *Academy of Management Review*, *32*(1), 9–32. https://doi.org/10.5465/amr.2007.23463672

Sluss, D. M., Ployhart, R. E., Cobb, M. G., & Ashforth, B. E. (2012). Generalizing newcomers' relational and organizational identifications: Processes and prototypicality. *Academy of Management Journal*, *55*(4), 949–975. https://doi.org/10.5465/amj.2010.0420

Steffens, N. K., Haslam, S. A., & Reicher, S. D. (2014). Up close and personal: Evidence that shared social identity is a basis for the 'special' relationship that binds followers to leaders. *The Leadership Quarterly*, *25*(2), 296–313. https://doi.org/10.1016/j.leaqua.2013.08.008

Suls, J., Martin, R., & Wheeler, L. (2002). Social comparison: Why, with whom, and with what effect? *Current Directions in Psychological Science*, *11*(5), 159–163. https://doi.org/10.1111/1467-8721.00191

Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal of Experimental Social Psychology*, *1*, 27–31. https://doi.org/10.1016/0022-1031(66)90062-x

Wojciszke, B. (2005). Morality and competence in person- and self-perception. *European Review of Social Psychology*, *16*, 155–188. https://doi.org/10.1080/10463280500229619

Wojciszke, B., Dowhyluk, M., & Jaworski, M. (1998). Moral competence-related traits: How do they differ? *Polish Psychological Bulletin*, *29*, 283–294.

Ybarra, O., Park, H., Stanik, C., & Lee, D. S. (2012). Self-judgments and reputation monitoring as a function of the fundamental dimensions, temporal perspective, and culture. *European Journal of Social Psychology*, *42*, 200–209. https://doi.org/10.1002/ejsp.854

Ybema, J. F., & Buunk, B. P. (1993). Aiming at the top? Upward social comparison of abilities after failure. *European Journal of Social Psychology*, *23*(6), 627–645. https://doi.org/10.1002/(issn)1099-0992