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Pygmalion in the Pipeline:

How Managers' Perceptions Influence Racial Differences in Turnover

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Abstract

High rates of turnover among racial minority employees have largely been explained by the adage that dissimilarity breeds discontent. An unexplored, but potentially powerful driver of turnover may emerge as a result of supervisors' and employees' own beliefs about minority employees' abilities. We rely on predictions from research on Pygmalion effects to examine how external, leader biases can elicit subsequent differences in employees' internal cognitions, which then impact turnover decisions. Utilizing a survey study of 228 employers and employees across four time points, we found support for the notion that leaders view racial minority new hires as having less efficacy than their White counterparts, and that these biases, when combined with less satisfactory supervision, lead minorities to have decreased self-efficacy, subsequently causing them to perceive a less viable future in that company and voluntarily turn over.

Keywords: Pygmalion, racial minorities, stereotypes, self-efficacy, turnover

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Pygmalion in the Pipeline:

How Managers' Perceptions Influence Racial Differences in Turnover

Although organizations have made great strides in attracting a racially diverse workforce, the effects of such efforts are constrained by the fact that racial minorities turn over at greater rates than Whites do (Bureau of Labor Statistics, 2018). This phenomenon, known as the "leaky pipeline" (Pell, 1996), presents a serious problem for organizations intent on achieving a diverse workforce. Explanations for this leaky pipeline have primarily relied on relational demography (Tsui et al., 1991) and similarity-attraction theories (Byrne, 1971), suggesting that racial minority employees are simply more satisfied working with similar others (Elvira & Zatzick, 1998). These studies take the perspective that people interpret a lack of representation in an organization as indicative of unsupportive and hostile climates – perceptions which give rise to an increase in withdrawal and turnover (Tsui et al., 1991; Zatzick et al., 2003. Although lack of representation is a factor in withdrawal behaviors, these perspectives place the focus, explanation, and to some extent, the responsibility of the "leaky pipeline" on racial minority employees. That is, extant scholarship has yet to fully investigate the role of managerial biases in explaining racial discrepancies in turnover.

In the current study, we propose that Pygmalion effects, the process by which an outside observer's expectations of an outcome unintentionally increase the likelihood of that outcome occurring, explain these racial differences in turnover. Specifically, we propose that managers' biases manifest in lowered expectations of minority new hires abilities. We further anticipate that these expectations can shape new hires' perceptions of their own abilities, which then cause them to perceive less of a future at that company and subsequently decide to turn over at higher rates than Whites.

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The Pygmalion effect is a special case of the self-fulfilling prophecy, in which people behave "in accordance with the expectations of another" (Kierein & Gold, 2000). Theoretical models explaining the Pygmalion phenomenon originated in the education literature (Brophy & Good, 1974; Darley & Fazzio, 1980; Rosenthal et al., 1974). These models typically engender three distinct stages in which 1) an educator develops expectations for a student or a group of students regarding their ability to succeed; 2) the educator engages in subtle, differential treatment of the student(s), as a result of these expectations; and 3) the treatment is internalized by the student(s), influencing their motivation to succeed in the course (Trouilloud et al., 2002). We contend that these steps are likely to occur in organizations due to supervisor biases. Research has not considered the potential implications of self-fulfilling prophecies for these 'leaky pipelines'; we know that self-fulfilling prophecies are problematic but we didn't know (a) that these are communicated between supervisors and subordinates in ongoing work relationships, (b) that these differentially impact minority employees, and (c) that the destructive effects can extend to turnover.

Most studies examining Pygmalion effects focus on experimentally manipulating managers' expectations of a group and then examining whether that group performs in alignment with those bolstered/decreased expectations. Research has yet to examine the impact of differential manager expectations that exist naturally, as a result of stereotypes. Furthermore, these studies have not measured the intervening influence of employees' own beliefs, a critical mediator in Pygmalion effects (Lunenburg, 2011). Prior studies have merely assumed that managers' beliefs contributed to differential outcomes. Furthermore, research on Pygmalion effects primarily focuses on its impact on task-performance, neglecting other important outcomes that can result from these supervisor perceptions. We believe that Pygmalion effects will also

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lead to problematic decrements in self-efficacy that will subsequently cause employees to re-evaluate their future at the organization and cause them to voluntarily turn over. Relatedly, there is currently a lack of theory and understanding about the underlying mechanisms involved in the leaky pipeline phenomenon with regard to race and turnover. Integrating Pygmalion theory and social cognitive career theory from the educational and counseling psychology literatures may help to bolster our understanding of these problematic differences, showing that supervisor biases are the cause of these different self-perceptions that lead racial minorities to turn over.

Lastly, more research is needed on strategies to combat these race-based Pygmalion effects. Within our study, we examine differences in the extent to which supervisors are able to overcome their automatic biases, examining how some supervisors may be able to offer more satisfactory supervision, and thus avoid the self-fulfilling cycle, in spite of their prejudices. This would have important implications for organizations about the benefits of selecting and training supervisors to control and regulate their implicit biases.

Thus, the current study builds on prior work in three important ways. First, we extend the aforementioned laboratory findings to a real workplace, using longitudinal data from supervisors, employees, and personnel records to verify whether outcome differences are attributable to individuals' internalized expectations of efficacy. Second, this research tackles the leaky pipeline phenomenon in a new way, examining how Pygmalion effects may explain differences in perceived career futures and voluntary turnover behaviors among racial minority employees. Third, we examine differences among supervisors that can act as important boundary conditions under which supervisory expectations can trigger or prevent these Pygmalion effects.

Race and Managers' Efficacy Perceptions

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Characteristics, such as age, gender, and race, elicit negative stereotypes among decision-makers within organizations, which may produce more negative treatment of individuals who belong to these groups (Ridgeway, 1991). Stereotyping is a cognitive heuristic in which the perceiver organizes knowledge sources in an efficient manner (Ford & Stangor, 1992), often on the basis of readily apparent visible characteristics, such as surface-level demographic traits (Lord & Maher, 1993). These stereotypes are highly inflexible, as individuals are likely to only remember information that confirms these stereotypes (Goldberg & McKay, 2015). Indeed, Blacks and Hispanics are stereotyped as being low in competence, compared to Whites (Fiske et al., 2002), and managers frequently rate White employees' performance more favorably than their Black counterparts (Kraiger & Ford, 1985; Stauffer & Buckley, 2005). Relatedly, Black and Hispanic employees are often seen as having lower levels of efficacy (Fiske et al., 2002), or in other words, as being less capable of accomplishing the tasks and duties associated with their jobs (Bandura, 1977). These sentiments extend to attributions made for how the minority groups obtain jobs (i.e., via affirmative action; Heilman et al., 1992) and why they perform successfully at work (i.e., due to luck and assistance from others; Greenhaus & Parasuraman, 1993). Importantly, these negative stereotypes about Black and Hispanic employees are pervasive across racial groups, and racial minority supervisors are not immune to these biases (Fiske et al., 2002). These findings suggest that Black and Hispanic employees will be viewed by their supervisors as having lower levels of efficacy compared to White employees, consistent with the first stage of the Pygmalion effect (e.g., that raters develop performance expectations for certain groups).

Hypothesis 1: Managers will have lower efficacy beliefs about racial minority new hires than about White new hires.

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Managers' Efficacy Perceptions and Employee Self-Efficacy Perceptions

The Pygmalion effect (Rosenthal & Jacobson, 1968) proposes that outside observers (in this case, managers) may have expectations regarding an outcome, which unintentionally positively influence the likelihood of that outcome occurring. In accordance with this theory, a supervisor's perceptions of an employee's efficacy should influence the employee's subsequent self-efficacy perceptions. (Gist, 1987; Eden, 1992). These Pygmalion effects, like stereotyping and discrimination (Gawronski et al., 2006), operate through implicit, nonverbal behaviors that are difficult to detect (Eden, 1992).

It is likely that supervisors differ in the extent to which they are able to control these implicit biases and assumptions that lead to these differences in treatment. Research has shown that differences in empathy (Shih et al., 2013), motivation (Devine et al., 2012), and cultural competence (White-Means et al., 2009) moderate the relationships between stereotypes and discriminatory treatment. Leaders who are motivated and skilled at controlling and regulating these biases may therefore be more able to recognize and prevent their biases from leaking out and negatively impacting their racial minority subordinates' satisfaction with their supervision (Burns et al., 2017). Indeed, supervisory satisfaction, defined as the level of satisfaction with a supervisor's ability to coordinate and reconcile the needs and goals of the subordinate (Scarpello & Vandenberg, 1987), is directly correlated with the quality of supervision that the supervisor is able to provide to the subordinate (Mor Barak et al., 2009; Podsakoff et al., 1990). We postulate that supervisor biases regarding employees' efficacy will only influence employees' self-efficacy when those employees experience less satisfactory supervision. Said another way, providing satisfactory supervision should prevent these Pygmalion effects from unfolding and negatively impacting the perceptions and subsequent behaviors of employees. This process corresponds to

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the second stage of the Pygmalion effect, in which managers must treat a group of employees differently based on preconceived expectations, which would then influence subordinates' self-perceptions of their capabilities. This stage, and in turn, the confirmatory effects of managers' expectations, would therefore be averted to the extent that managers provide satisfactory supervision. It follows that we hypothesize:

> *Hypothesis 2: Managers' efficacy perceptions and delivery of satisfactory supervision will interact to impact new hire's self-efficacy, such that more negative efficacy perceptions of racial minority new hires will predict reduced new hire self-efficacy, but only when managers also provide less satisfactory supervision.*

Self-Efficacy and Perceived Career Future

Prior research on the Pygmalion phenomenon has primarily focused on its effects on performance outcomes. We believe these dynamics are also relevant to one's perceived career future and turnover decisions within a company. Research from counseling psychology provides explanations for the impact of racial differences in self-efficacy on perceived career interests, aspirations, and longevity. Specifically, social cognitive career theory describes how career choice is dynamic, constantly modified based on learning experiences and performance feedback (Lent and Brown, 1996). This work explains how race impacts career choices and decisions through self-efficacy beliefs. These beliefs are shaped by the reactions and differential treatment from others, which is often internalized (Lent and Brown, 1996).

Empirical research in these domains demonstrates how racial minority students have lower levels of self-efficacy in various educational domains such as math and sciences, given their internalization of societal and teacher biases (O'brien et al., 1999). These reductions in efficacy subsequently predict decreased interest in pursuing jobs within these fields. Indeed, a

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meta-analysis of 60 samples found a moderate correlation between self-efficacy and interests (Rottinghaus et al., 2003) and research in these areas shows a strong and consistent linkage between self-efficacy and career interests/aspirations (Gushue et al., 2006; Wilson et al., 2007; Tang et al., 2008; Nauta & Kahn, 2007; Lopez & Ann-Yi, 2006). These phenomena pertaining to student career interests and aspirations should similarly affect employees' career perceptions and decisions in organizational settings (Rojewski, 2005). Specifically, when racial minority employees exhibit lower levels of self-efficacy due to managerial biases, they may distance themselves psychologically from their organizations and view themselves as having a less viable future within that company. Indeed, Bandura's seminal work on self-efficacy argued that "people can give up trying because they lack a sense of efficacy in achieving the desired behavior." Specifically, employees who have low levels of self-efficacy are more likely to experience frustration and anxiety when trying to achieve a job they do not feel capable of, thus causing them to withdraw their commitments to and perceptions of a future with that organization (Bandura, 1977). This link relates to the third stage of the Pygmalion effect, in which managers' perceptions influence employees' motivation (Trouilloud et al., 2002). We therefore hypothesize that differences in self-efficacy engendered by these biases will subsequently predict perceptions of one's career future at that organization, hypothesizing:

Hypothesis 3: New hire self-efficacy will be positively related to perceived career future.

Perceived Career Future and Turnover

Employees' expected future within a company should affect their turnover behaviors. Perceptions that one's place in the organization is secure (McKnight et al., 2009), that one is satisfied with promotional opportunities (Quarles, 1994), and that one is making adequate progress in their career and in the company (Weng & McElroy, 2012) are all linked to decreased

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turnover intentions. According to social exchange theory, individuals are motivated to achieve reciprocity within their relationships, seeking balance between the perceived costs and benefits (Blau, 1964; Cook et al., 2013). Within organizations, employees expect mutual exchanges between their input and investment into an organization and the outcomes and rewards provided by the organization (Wayne et al., 1997). If an employee perceives that their organization is likely to reward them with future career opportunities based on their work input, they should feel more committed to that organization (Nouri & Parker, 2013).

Similarly, when employees perceive that their organizations are able to provide them with desirable career opportunities, they become embedded and motivated to remain at that organization in order to pursue those opportunities (Kraimer et al., 2011). Indeed, these perceived opportunities can act as strong links or ties that keep employees enmeshed within their current organizations (Mitchell et al., 2001; Lee et al., 2004). Employees may also be hesitant to leave given that other organizations may not offer them these same opportunities. These perceptions of potential losses associated with leaving further embed employees (Mitchell et al., 2001; Lee et al., 2004). Thus, both potential benefits associated with staying and potential losses associated with leaving embed employees within their current jobs. Importantly, job embeddedness is closely associated with turnover decisions (Mitchell et al., 2001; Lee et al., 2004). Indeed, a study on hospitality employees found that job embeddedness perceptions and behaviors were strong predictors of voluntary turnover, over and above individual and group-level predictors (Felps et al., 2009). As such, supervisor behaviors that signal support for employees' career futures should lead to decreases in turnover (Chang, 1999). Alternatively, when employees perceive that these career opportunities are lacking, they often begin considering other organizations that can better support their career goals (Kraimer et al., 2011).

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Thus, supervisor behaviors that foster decreases in self-efficacy followed by diminished career future perceptions will elicit increased turnover behaviors within that organization. Therefore, we hypothesize:

Hypothesis 4: New hire perceptions of career future will be negatively related to turnover.

Given each of these proposed relationships and the literature on the leaky pipeline for racial minorities (Ahmad & Boser, 2014; Riegle-Crumb & King, 2010), we expect to observe a direct effect between employee race and turnover. While we include this relationship in our model for completeness, it is not germane to Pygmalion theory and thus, we do not pose formal hypotheses about it.

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Method

Sample and Procedure

This study was part of a larger project (see Appendix for data transparency table) in which all (N = 2,303) newly hired employees at a financial services institution were asked to participate in our study during their first week. These employees primarily consisted of customer service representatives and collections agents working in call centers. Of the employees invited, 1,553 individuals completed the initial survey indicating their race, gender, age, and self-efficacy perceptions. We simultaneously surveyed managers to assess their initial perceptions of each employee's efficacy, as well as the managers' race, gender, and age. The process for selecting candidates varied based on position and level. However, supervisors had little to no involvement in most candidates' selection. Three months after this initial survey, employees indicated their level of supervisor satisfaction as well as their self-efficacy perceptions. This time-lag was chosen so that employees had sufficient time to establish stable levels of supervisory satisfaction

and because past research has allowed between two and four months for self-efficacy beliefs to change as a result of supervisor's or teacher's expectancy (Friedrich et al., 2015; Rosenthal & Jacobson, 1968). Two months after this second survey, employees indicated their future career intentions. The organization provided data on voluntary exits that occurred within fourteen months after the new hire completing their third survey. This longer time lag for the last measurement allowed us to capture greater variability in our dependent variable of turnover, which is difficult to assess given that organizations typically have low base-rates for this phenomena (Allen et al., 2003; Rubenstein et al., 2018). A strength of this temporal-lag methodological approach is the reduction in common method bias. When responding to several measures at once, participants often implicitly believe two variables ought to be correlated, and respond in a way that is consistent with their previous response (Berman & Kenny, 1976). By separating several of these constructs through time, we eliminated this potential source of bias (Podsakoff, 2003). Matching the new hire responses across time periods and with the supervisor surveys yielded a final sample size of 268 observations.[1]

The average age of the new hires was 33.83 (SD = 10.90) and 71.5% (N = 191) were female. Additionally, 59.4% (N = 159) were White, 17.5% (N = 47) were Black, 8.2% (N = 22) were Hispanic, 9.2% (N = 25) were Asian, and 5.6% (N =15) were mixed or other. Pygmalion effects are likely to occur for groups that are stereotyped as being low in competence (Rosenthal & Jacobson, 1992). While studies often find that Asian employees are perceived as being high in

[1]Comparing respondents to non-respondents yielded no significant differences in gender, self-efficacy, or perceived career futures. We did, however, find that respondents were more likely to be racial minorities, rated as having lower efficacy, and be less satisfied with their supervisors compared to non-respondents. This aligns with our theorizing, would suggest a more conservative test of our model, and has been accounted for by our FILM analysis approach, which is relatively unbiased even with systematic missing data.

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competence (Fiske et al., 2002; Lin et al., 2005), these studies also find that they are perceived as being low in warmth. Thus, they would not likely experience Pygmalion effects in the same ways. According to the stereotype content model, groups that are perceived as high in competence and low in warmth are often met with the negative reaction of envy (Cuddy et al., 2008). Indeed, several studies support the idea that Asian-Americans sometimes face negative, differential treatment, including disliking and aversive emotional reactions (i.e., hostility, fear, resentment) towards them (Lee, 1994; Lee, 2015; Lin et al., 2005; Maddux et al., 2008). Given the mixed valence of Asian stereotypes, we exclude Asian new hires from our sample and focus on differences between White employees and Black and Hispanic employees. 228 participants had complete data on all of the variables. The average age of supervisors was 38.2 (SD = 11.86) and 57.7% (N = 86) were female. Additionally, 65.1% (N = 97) were White, 13.4% (N = 20) were Black, 5.4% (N = 8) were Hispanic, 10.1% (N = 15) were Asian, and 6.0% (N = 9) were mixed or other.

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Measures

Race. Race was coded as 0 = White and 1 = non-White (i.e., Black and Hispanic), for both new hires and managers.

New Hire Self-Efficacy. Self-efficacy was assessed using Schwarzer and Jerusalem's (1995) measure. The scale had eight items; however, factor analyses demonstrated that the positively worded and negatively worded items loaded onto separate constructs. Negatively worded items on other scales have similarly loaded onto separate constructs (Hazlett-Stevens et al., 2004; Idaszak & Drasgow, 1987), which may occur when a small percentage of participants exhibit careless responding (Schmitt & Stuits, 1985). Research demonstrates that reverse coded items can harm the reliability of a scale, without improving response bias (van Sonderen et al.,

2013). Thus, we only used the four positively worded items from this scale, consistent with recommendations of Roszkowski and Soven (2010). Participants rated their agreement with statements such as, "I have all the skills needed to perform my job very well," from 1 (strongly disagree) to 7 (strongly agree) (α = .71).

Manager Ratings of New Hire Efficacy. Managers' perceptions of employees' efficacy were assessed using the same scale, but worded to reflect perceptions of the new hire. For example, the item above was reworded to, "The new hire has all the skills needed to perform his/her job very well," with response options from 1 (strongly disagree) to 7 (strongly agree) (α = .85).

Supervisor Satisfaction. Satisfaction with supervision was assessed using a measure of supervisor satisfaction (Seashore et al., 1982). This measure asks participants "How satisfied are you with the following aspects of your job", with items including "The degree of respect and fair treatment I receive from my boss". Participants rated three items from 1 (Very dissatisfied) to 5 (Very Satisfied) (α = .93).

Perceived Career Future. Perceptions of career future were measured using a five-item scale (Smith, 1976). These items included "Do you feel your career is progressing at this company?" with anchors ranging from 1 (I'm making no progress) to 5 (I'm making a great deal of progress). This scale was reliable (α = .89).

Turnover Behaviors. The organization provided dichotomous data on voluntary turnover that occurred within a year after employees completed the final survey (0 = stayed; 1 = exited). Of the 228 employees in our sample, 109 left within the year. Of these, 70 were White (representing 44.0% of White employees) and 39 were non-White (representing 56.5% of non-White employees).

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Control Variables.

It is possible that racial minorities have negative, internalized beliefs regarding their status and efficacy, which could potentially elicit differential perceptions from their managers. To rule out this possible influence, we included employees' initial levels of self-efficacy as an antecedent of manager's perceptions of employee efficacy. Also, although both minority and majority members perceive non-White subordinates as less competent (Fiske et al., 2002), to account for the possibility that supervisors' race might influence their beliefs, we included supervisor minority status as well as the interaction between supervisor and subordinate minority status as predictors of manager's perceptions of efficacy. We also included employees' gender, managers' gender, and the interaction between the manager's and employee's gender, to control for individual and interactional gender biases (Fiske et al., 2002; Tsui & O'Reilly, 1989). Prior research has demonstrated that women face negative competence-related stereotypes (e.g., Fiske et al., 2002). In addition, there is evidence of gender similarity effects in leader-subordinate interactions (Tsui & O'Reilly, 1989; Tsui et al., 2002). Lastly, although all of the participants in this study were newly hired employees, they varied greatly in terms of their prior years of job experience. These prior experiences with supervisors in other organizations may have suppressed the effects of the current supervisor's perceptions on self-efficacy and perceived career future. Indeed, several studies demonstrate that there is a positive relationship between years of experience and self-efficacy (Bronstein & Tzivian, 2013; Tang et al., 2004; Soudagar et al., 2015). As such, participants were asked to give a numerical response to the question of "How

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many years of work experience had you had in your current field?" (M = 6.34; SD = 7.38), which we also include as a control.[2]

In order to compute the potential interaction between employee and supervisor racial minority status, we multiplied these two dichotomous variables by each other. The resulting variable was treated as the interaction term. The same process was used for the gender-related control variables. Variables were centered before the interaction terms were calculated, which ensured that the coefficients of the main effect variables could be interpreted as the average effect for that variable across levels of the other.

Analysis Strategy

We employed path analysis to test our model using the software Mplus (Muthén & Muthén, 1998; 2017). This allows us to test all stages of the model simultaneously, including the examination of indirect effects (even though these were not specifically hypothesized). We used observed rather than latent variables in this analysis so that indirect effects involving the interaction between manager ratings of new hire efficacy, and supervisor satisfaction, could be estimated. In addition, Mplus allows for the inclusion of turnover in the final step, which as a dichotomous outcome, requires a logistic regression approach. We adopted a two-step SEM approach, in which we first examined the fit statistics of our measurement model, which we compared to a nested alternative structural model (Anderson & Gerbing, 1988). In the second step, we examined the significance of the path estimates to test our individual hypotheses. Due to there being some missing data, we performed Full Information Maximum Likelihood analysis, which allows for the best use of all available data and produces less biased estimates in longitudinal designs than most missing data strategies (Newman, 2003). The range of number of

[2]Analyzing our model without these control variables did not yield any meaningful differences in our results.

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employees per supervisor included in the sample was from 1 to 23, with a mean of 2.44 (*SD* = 2.85). Thus, we used cluster-robust standard errors (McNeish et al., 2017) with the TYPE=COMPLEX command in Mplus to account for the possible influence of non-independence on our results.

Results

Table 1 presents the means, standard deviations, correlations, and internal consistency reliabilities (on the diagonal) for the variables of interest. All correlations with dichotomous variables of turnover, race, and gender are point-biserial correlations.

Path Model

The model assumed there would not be complete mediation, i.e. paths were included from all earlier variables in the chain to later variables. In terms of control variables, employees' self-efficacy perceptions at Time 1 were associated with self-efficacy perceptions at time 2 (b = .68, $p < .001$). Female managers rated employees more positively in terms of perceived efficacy compared to male managers (b = -.12, $p < .01$). Female employees were more likely to leave the organization a year later when they had female supervisors (odds ratio = 1.15, p = .02). None of the other control variable relationships were significant, but full results can be seen in Table 2.

Hypothesized Relationships. The results for the path estimates of our hypothesized model are presented in Table 2. Hypothesis 1 stated that the minority status of the employee would predict managers' perceptions of their efficacy. This hypothesis was supported, in that racial minority status significantly influenced managers' efficacy perceptions (b = -.10, p = .004). Specifically, upon meeting them at week one, managers viewed Black and Hispanic new hires as having less efficacy than their White counterparts. This effect was not related to the race of the supervisor. Hypothesis 2 postulated that supervisors' initial perceptions of employees'

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efficacy would interact with supervisor satisfaction to predict employees' subsequent self-efficacy perceptions. As shown in Table 2, this hypothesis was supported (b = .02, p < .001). As this is a moderated effect, we plot this in Figure 2. Where the satisfaction with supervision is high, there is no effect of supervisor perceptions of employee efficacy on subsequent employee self-efficacy. However, where the satisfaction with supervision is poor, there is a positive relationship: higher supervisor perceptions at time 1 are associated with higher self-efficacy at time 2, supporting hypothesis 2. Hypothesis 3 predicted that higher self-efficacy at time 2 would be associated with more positive evaluations of career future at time 3. As shown in Table 2, this hypothesis was also supported (b = 0.16, p < .001). Hypothesis 4 asserted that perceptions of job future would negatively influence subsequent turnover. Table 2 shows that this hypothesis was supported (odds ratio = 0.70, p < .001). Together, these results provide support for the notion of a Pygmalion effect causing racial minorities to turn over at higher rates than their White peers within this organization, at least when they experience less satisfactory supervision.

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Supplemental Analyses

Because the direct effect of race on turnover has been well researched and was not a direct part of our test of Pygmalion theory, we did not pose a formal hypothesis about this relationship. However, we tested whether there was any evidence of indirect (mediated) effects in accordance with the model presented in Figure 1. The total indirect effect between race and turnover was not significant (b = -.01; 95% confidence interval (-.04, 0.04)). However, there was a significant total indirect effect between race and perceived career future (b = .04, 95% CI (.01, .07)), which suggests minority staff are likely to have poorer evaluations of the future of their career because of the effect via supervisor perceptions of efficacy, and subsequent self-efficacy. To examine this indirect effect in conjunction with the moderated effect found in support of

hypothesis 2, we looked at moderated mediation from supervisor perceptions of new hire efficacy to employee evaluations of career future, via employee self-efficacy but moderated by supervisor satisfaction. We found support for this, with the index of moderated mediation being -.04 (95% CI (-.08, -.01)). Taken together with the other indirect effects, this provides partial but reasonably strong support for the theorized model. Specifically, we found that employee race influenced managers' perceptions of employee efficacy, and that these perceptions influence employee self-efficacy (especially when supervisor satisfaction is poor), followed by perceived career future, and actual turnover.

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Discussion

The current results demonstrate that supervisors stereotype racial minorities (i.e., Black and Hispanic) as being less efficacious than their White counterparts, and that these assumptions, when combined with less satisfactory supervision, predict differences in self-efficacy and subsequent career perceptions and turnover decisions. We provide evidence that Pygmalion effects extend beyond performance to include future career perceptions and turnover behaviors. Specifically, we found that employee race predicted supervisors' perceptions of employee efficacy, even after controlling for employee's initial self-efficacy perceptions. This contributes to the scant empirical research investigating naturally occurring Pygmalion effects in organizational settings with new hire-supervisor dyads (for an exception, see Whiteley et al., 2012) and suggests that race is an important antecedent to Pygmalion effects.

This work also provides a new explanation of the race-based leaky pipeline that exists in organizations. Specifically, our results demonstrate that internalized differences in self-efficacy that produce these turnover discrepancies are a product of biased managerial expectations and behaviors. Thus, a more in-depth understanding of these supervisor-subordinate dyadic

relationships is critical to identifying and mitigating racial disparities in organizations. Importantly, our study shows that there are differences in the extent to which managers can overcome their biases in order to deliver equally satisfactory supervision to these subordinates, which effectively remediates the relationship between manager bias and employee turnover. As such, identifying strategies to bolster employee satisfaction with their supervisors may help to repair these leaks in the minority pipeline.

Theoretical Implications

In this study, we found that managers' reduced perceptions of employee efficacy predicted subsequent declines in employee self-efficacy perceptions when paired with less satisfactory supervision. Pygmalion theory suggests that there are subtle ways that an outside observer's expectations can seep into interpersonal interactions with that individual to influence the individual's self-perceptions (Eden, 1992). Our findings extend this work by demonstrating that there are differences in the extent to which these observers (ie., supervisors) allow these expectations to impact their treatment of targets (ie., subordinates), thereby highlighting an important boundary condition for these Pygmalion effects. This signifies a potential strategy for curtailing the internalization of bias related to the efficacy of racial minority workers. This finding corroborates Eden's argument that leadership behaviors are critical to understanding the relationship between the leader's expectations of their subordinate and the subordinate's self-efficacy.

This study also showed that the combination of manager's efficacy expectations and delivery of satisfactory supervision drove self-expectations, which subsequently impacted turnover decisions. These findings correspond to the later stages of the Pygmalion phenomenon. When one has developed expectations for one's self, those expectations positively influence the

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likelihood of that event occurring (Eden, 1992). We found this to be the case in the current study, with differences in self-efficacy predicting differences in perceived career future and subsequent turnover behaviors. This corroborates research in educational psychology, which shows that racial biases held by teachers can be internalized by students. These differences cause Black and Hispanic students to have lower levels of efficacy in certain majors, fields, and careers, thereby causing them to withdraw from or avoid pursuit of those areas. These phenomena unfold in similar ways for racial minority employees in organizations, who make decisions regarding their longevity at a company based on these biased managerial perceptions. In sum, these findings suggest negative stereotypes regarding perceived efficacy of employees, when combined with less satisfactory supervision, lead to internalized differences in self-perceptions of efficacy based on race, ultimately leading to turnover. This study thereby contributes to the literature on race and turnover, providing direct evidence to suggest that the leaky pipeline is at least partly attributable to these Pygmalion effects.

Practical Implications

These findings suggest several practical implications for organizations striving to achieve greater workplace diversity and inclusion. Broadly, our results indicate that attracting and retaining a talented, diverse workforce requires taking steps to ensure that managers view and treat their subordinates as equally competent and capable, regardless of race. Given that new hire race affected managers' perceptions of new hire efficacy, we suggest that diversity efforts targeted towards managers might be particularly fruitful. One strategy might be to select or promote managers who demonstrate less biased evaluations or more inclusive approaches to personnel management. This strategy would be beneficial regardless of the race of the supervisor, as the biases associated with racial minority employees exist across racial groups

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(Fiske et al., 2002). Indeed, controlling for the race of the supervisor did not change the results of our study. As such, simply hiring additional racial minority supervisors is not sufficient to mitigate these effects.

Relatedly, another strategy could be to improve the objectivity of selection systems, and integrate supervisors in the selection processes. This could help to improve supervisors' knowledge and awareness of the abilities of their incumbents. In the current study, supervisors were largely removed from the selection process, thereby increasing the variability and subjectivity of efficacy perceptions of their new hires. Thus, ensuring that supervisors are given clear and objective standards for selection, and having them be a more integrated part of the process may help to reduce their reliance on stereotypical thinking.

In addition to appointing supervisors carefully and integrating them in the selection process, training could also be developed to improve supervisors' leadership of their new hires. Indeed, our study demonstrated that managers who provided more satisfactory supervision were able to mitigate the negative outcomes associated with their implicit biases. It is possible that these managers are providing more individualized time and attention with their subordinates, thus allowing them to reduce their reliance on stereotyped thinking. Indeed, research has shown that when perceivers lack information about individuals, they are more likely to rely on stereotypes about identity-based characteristics (Singletary & Hebl, 2009). Thus, learning more information about each individual on a personal level may be helpful in preventing these race-based Pygmalion effects. This strategy of individuation is only effective when individuals have the necessary motivation and cognitive resources to do so (Fiske et al., 1999; Singletary & Hebl, 2009). This may explain why negligent managers and/or those providing supervision that is perceived as less satisfactory are more likely to harm the self-efficacy of their racial minority

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subordinates. Organizations should therefore provide training to all of their supervisors on how to engage in high-quality supervisory strategies, such as providing more individualized approaches and in-depth mentoring to improve supervisor satisfaction, especially among minoritized workers. Thus, by selecting managers who have fewer biases, incorporating them in the selection process, and training them on how to overcome their biases and engage in effective leadership behaviors, organizations are apt to indirectly influence employees' self-efficacy and subsequent turnover behaviors.

Organizations may also want to consider interventions to increase employees' self-efficacy directly. For example, research suggests that providing employees with more frequent, objective performance feedback increases their knowledge about how to accurately perform a task, thereby increasing their self-efficacy (Wang & Wu, 2008). Furthermore, providing more objective performance feedback could improve the accuracy and stability of these self-efficacy perceptions, causing them to be less impacted by racial biases. As such, we encourage organizations to establish a variety of interventions related to selection and evaluation of employees and supervisors to alleviate the disparities observed in our study.

Finally, organizations should communicate to new hires their potential futures within the organization. If an employee perceives career growth opportunities, they are less likely to turnover because they see value in maintaining their position and status within the company (Nouri & Parker, 2013). Organizations can provide employee growth opportunities by hiring from within, providing adequate employee training, and encouraging supervisors to provide employees with individualized attention and advice regarding their career development (Chang, 1999). Human resource professionals could also play a role in this process, by attending to the professional development of racial minority employees to help them with succession planning

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and with identifying internal opportunities that are available to them within the company. This could reduce potential discrepancies in their perceptions of their career futures. These counselors could also help reinforce their job-related efficacy and buffer against the effects of potential bias exhibited by their supervisors. By implementing these types of practices, organizations may be able to decrease turnover.

Limitations and Future Directions

Our study is not without limitations. As with all studies that collect dyadic manager and employee perceptions over multiple time periods, we experienced attrition in our observations. This limitation resulted in a more conservative test of our hypotheses, as those with the lowest levels of self-efficacy were more likely to leave the organization and drop out of the study. Our study also relied on a sample of employees from a single organization, which may limit the generalizability of our findings. Indeed, the sample in question exhibited a high rate of turnover (47% within the first year). Although this is typical for the types of jobs and positions within our sample (which primarily consisted of call-center workers), it does suggest that these findings may not be as robust in organizations with lower turnover rates. Relatedly, although we found support for our model, many of the zero-order correlations among the variables were quite small. Thus, the results should be interpreted with caution. Also, given our study design, we cannot definitively make conclusions about the causal ordering of our results. Indeed, it is possible that employees who were more likely to experience decreases in self-efficacy over time were accurately viewed as having less potential by their managers. Thus, more work is needed to corroborate these results with more sophisticated methodologies across larger, more diversified samples to establish greater confidence in our study's findings. Future work in this area should also collect objective performance data so that comparisons can be made between this data and

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supervisor perceptions. In doing so, we can better assess the extent to which these Pygmalion effects are produced by racial biases. Specifically, this might show conclusively how differences in self-efficacy, performance, and subsequent turnover decisions exhibited by racial minorities are a product of inaccurate supervisor stereotypes. Based on this initial investigation, however, it is clear that these biases at least play a role in the differences in turnover rates faced by minority vs. majority incumbents.

Although our study made substantial contributions to our understanding of this leaky pipeline phenomenon, several questions remain. In what ways are these Pygmalion effects produced for different racial groups, for other stigmatized identities, or for employees with combined stigmas? Research should examine how the unique stereotypes facing each stigmatized group may elicit their own unique set of Pygmalion effects and outcomes. For instance, it would be interesting to examine how stereotypic perceptions of Asian employees as being lower in warmth could impact their interpersonal treatment. Possibly, supervisor assumptions that they are less kind or helpful could elicit Pygmalion effects that would suppress the amount of OCBs enacted by this group. It would also be interesting to examine how other identities, such as one's gender, sexual orientation, disability status, or age might intersect with these racial stereotypes to impact Pygmalion effects. Lastly, identifying the stereotypes beyond warmth and competence that enact similar, subtle forms of mistreatment would be important for understanding the full set of barriers faced by stigmatized employees. Clearly, understanding whether, when, and how different stereotypes related to different groups elicit Pygmalion processes is an important avenue for future research.

Once research has identified when and how these Pygmalion phenomena occur, future research should examine potential organizational and individual remediation strategies.

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Specifically, researchers should examine specific ways to train managers to recognize and avoid these subtle manifestations of bias that negatively impact the performance and retention of their subordinates. Research on this topic has shown that diversity training exhibits small to moderate effects on explicit diversity-related attitudes and behaviors (Kalinoski et al., 2013). However, more work is needed to demonstrate that supervisor participation in these programs can subsequently improve the self-efficacy and success of their minority subordinates. Furthermore, certain types of training programs may be especially beneficially for targeting these more subtle biases that lead to these pernicious effects. Possibly, training supervisors on how to provide consistent, satisfactory supervision to employees of all backgrounds could be a fruitful approach. Future work should examine the efficacy of these different training approaches.

Lastly, research should examine specific measures that scholars and practitioners can use to identify those who are most likely to enact these Pygmalion effects. Certain individual differences, such as social dominance orientation (Pratto & Shih, 2000), or internal desires to suppress prejudice (Crandall, Eshleman, & O'brien, 2002), may predict who is more or less likely to allow their subtle, implicit biases to leak out in these problematic ways. This information would be useful in understanding the internal mechanisms underlying these Pygmalion phenomena, and would benefit practitioners intent on selecting supervisors that are more likely to have a positive influence on all of their incumbents, regardless of their social identities. Clearly, more research is greatly needed on this topic to better understand how to remediate these harmful, self-fulfilling prophecies that hinder organizational diversity and success.

Conclusion

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This study demonstrates that Pygmalion effects are an important driver of the leaky pipeline phenomenon exhibited by racial minority employees in organizations. Our results showed that managers often view Black and Hispanic employees as having lower efficacy than their White counterparts. Importantly, these prejudices, when combined with unsatisfactory supervision, predict racial minority employees' perceptions of themselves, which then cause them to turn over at greater rates. As such, it is important for organizational leaders to become aware of these biases so that they can work to prevent them from surfacing in subtle, often unconscious ways. In doing so, they may be able to fix these leaks in the minority pipeline.

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Table 1. Descriptive Statistics and Correlations Among Variables of Interest

Measure/Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9	10
1. Employee race (T1)	–	–										
2. Supervisor race (T1)	–	–	.00									
3. Employee gender (T1)	–	–	.04	.04								
4. Supervisor gender (T1)	–	–	.08**	.05*	.15**							
5. Employee work experience (T1)			-.07*	-.04	-.08**	-.05*						
6. Employee self-efficacy (T1)	6.27	0.60	.12**	.00	-.02	.01	.12**					
7. Manager's efficacy perceptions (T1)	5.78	0.98	-.07*	.11**	-.07*	.08**	.08**	.07*				
8. Supervisor satisfaction (T2)	4.28	0.93	.08*	.02	.05	-.07*	-.00	.09**	.00			
9. Employee's self-efficacy (T2)	6.07	0.76	.12**	.02	-.02	-.05	.11**	.63**	.08	.26		
10. Evaluation of career future (T3)	4.03	0.86	.05	.03	.02	-.06	-.00	.16**	-.02	.40**	.27**	
11. Turnover (T4)	–	–	.10**	-.02	.05	.11**	-.01	-.09**	-.11**	-.06	-.22**	.30**

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

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Table 2. Results of hypothesis tests

Dependent variable	**Supervisor perceptions of new hire efficacy (T1)**	**New hire self-efficacy (T2)**	**Perceived career future (T3)**	**Turnover (T4)[1]**
New hire race[2]	-0.10**	0.06	-0.03	1.10
Supervisor race[2]	0.02	0.02	0.06	1.02
Race interaction	-0.04	0.00	0.08	0.96
New hire gender[3]	0.06	0.05	-0.04	0.93
Supervisor gender[3]	-0.12*	-0.02	0.04	0.88
Gender interaction	0.06	-0.01	0.05	1.19
Employee work experience	0.01	0.00	-0.02	0.98
New hire self-efficacy (T1)	0.01	0.58**	0.11	1.10
Supervisor perceptions of new hire efficacy (T1)		0.37*	-0.15	1.56
Supervisor satisfaction (T2)		0.64**	0.08	1.89
Interaction effect[4]		0.02**	0.26**	0.99
New hire self-efficacy (T2)			0.16**	0.97
Perceived career future (T3)				0.70**

[1]Coded 1 = Left organization; 0 = Stayed at organization

[2]Originally coded 1 = Black/Hispanic, 0 = White; then centered prior to analysis

[3]Originally coded 1 = Male, 0 = Female; then centered prior to analysis

[4]Interaction between Supervisor perceptions of new hire efficacy (T1) and Supervisor satisfaction (T2)

Figures in table are unstandardized regression weights, except for those predicting Turnover (T4), which are odds ratios

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

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Figure 1. The Hypothesized Model

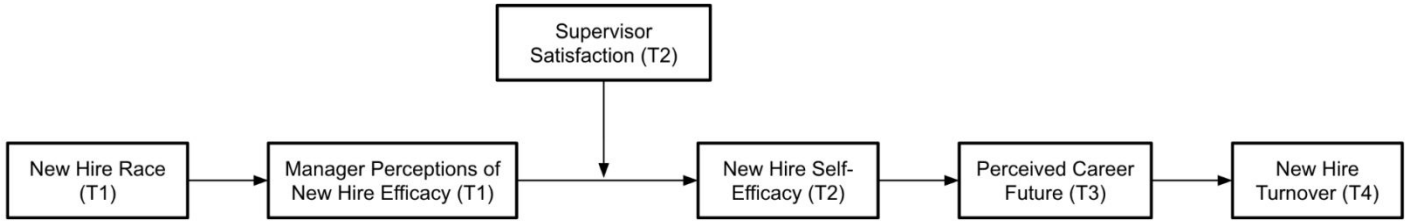

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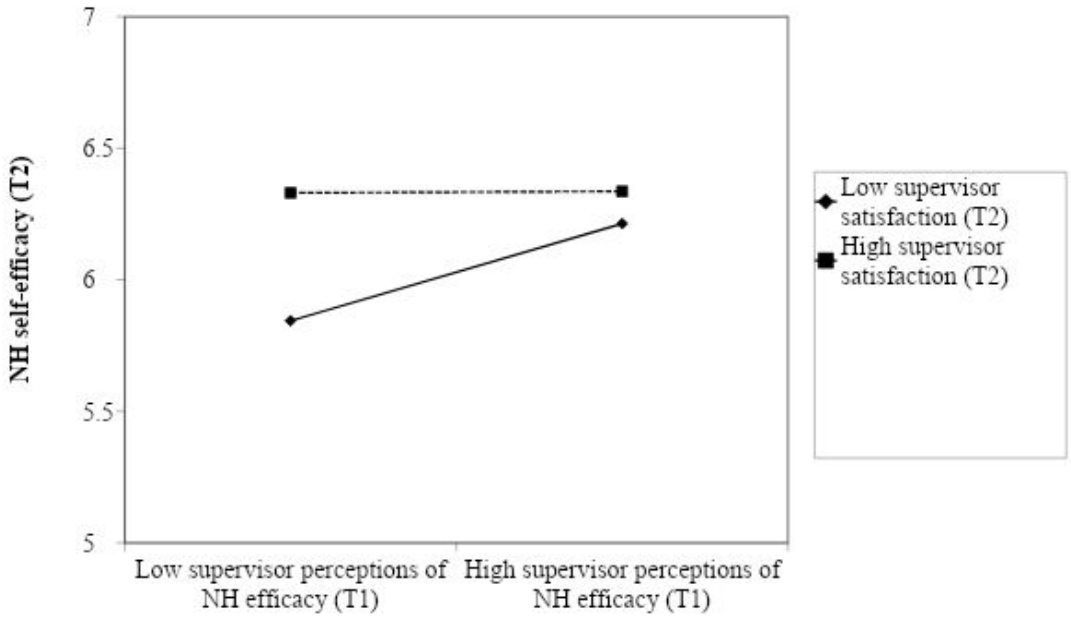
Figure 2. Interaction effect between Supervisor perceptions of new hire efficacy (T1) and Supervisor satisfaction (T2) predicting New hire self-efficacy (T2).



Appendix A

List of Measures

- New Hire Self-Efficacy (adapted from Schwarzer and Jerusalem, 1995)
  - I have confidence in my ability to do my job
  - I have all the skills needed to perform my job very well
  - I am likely to be an expert at my job
  - I am proud of my job skills and abilities
- Manager Ratings of New Hire Efficacy (adapted from Schwarzer and Jerusalem, 1995)
  - I have confidence in the new hire's ability to do his/her job
  - The new hire has all the skills needed to perform his/her job very well
  - The new hire is an expert at his/her job
  - I am please with the new hire's job skills and abilities
- Supervisor Satisfaction (adapted from Seashore et al., 1982)
  - How satisfied are you with the following aspects of your job?
  - The amount of support and guidance I receive from my supervisor
  - The overall quality of the supervision I receive in my work
  - The degree of respect and fair treatment I receive from my boss
- Perceived Career Future (adapted from Smith, 1976)
  - Do you feel your career is progressing at this company?
  - How do you feel about your future with this company
  - How do your feelings about your future with this company influence your overall attitude toward your job.
  - The way my future with this company looks to me now:
  - How secure are you in your present job

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Appendix B

Data Transparency Table

The data reported in this manuscript were collected as part of a larger multi-wave, multi-source data collection; as such, this data set has been/will be used for other studies. With the exception of demographic variables, which are used as control variables in these studies, none of the variables in these studies overlaps with any of the variables in the current study.

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Variables in the Complete Dataset	MS 1 (STATUS = published)	MS 2 (STATUS = under review)	MS 3 (STATUS = in preparation)	MS 4 (STATUS = current)
Commitment				
Marketability				
Perceptions of Org Fit	X			
Perceptions of Job Fit				
Perceived NH-Sup Similarity		X		
Perceived NH -Workgroup Similarity				
Self-efficacy				X
Demographics	X	X	X	X
Turnover Shocks	X			
Intention to Turnover	X			
Demographic Similarity to Group				
Leader-Member Exchange	X	X	X	
Socialization Tactics				
Political Knowledge				
Overall Job Satisfaction	X			
Coworker/Social Satisfaction				

Supervisor Satisfaction				X
Work Group Integration				
Role Clarity		X		
Perceived Organizational Support				
Perceived Career Future				X
Feedback Seeking				
Supervisor Perceptions of NH Efficacy				X
Turnover				X
Supervisor Demographics				X
Hire Date/Mode of Request				
Demographic Racial Similarity		X		
Supervisor Perception of New Hire Performance		X	X	
Work Experience		X		

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