PAY LEVELS AND PAY CHANGES

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ABSTRACT

The author reviews 15 years of applied psychological research on the antecedents and consequences of pay levels and pay changes. Although the research has been unevenly distributed and sporadic, the literature has progressed significantly and generated numerous few new themes. In particular, pay level research has uncovered widely varying stable determinants including individual and physical characteristics, personality, intelligence, and nuanced social-context-based explanations for explaining the gender pay gap. The literature on the consequences of pay changes (e.g., merit pay and bonuses) includes findings of positive relationships between incentives and performance quantity, and recent evidence establishing and solidifying a robust positive relationship between financial incentives and performance quality. Also evaluated are studies linking pay levels and pay changes with broader outcomes including creativity, innovation, antisocial behavior, turnover, job attitudes, and sleep patterns. The review concludes by identifying topics for future research.
A paradox confronts industrial and organizational psychologists studying compensation and financial incentives in the workplace. On one hand, academic and practitioner circles widely discuss pay-related issues. They find, for example, strong evidence that financial incentives are positively related to individual performance (Jenkins, Mitra, Gupta, & Shaw, 1998) and retention (Dineen & Williamson, 2012; Gerhart & Rynes, 2003; Shaw & Gupta, 2007), and that financial incentives typically have stronger effects than other organizational interventions for enhancing motivation and performance (Aguinis, Joo, & Gottfredson, 2013). Also, practitioner-oriented circles frequently spark heated media debates about compensation-related issues. Even in the United States, long a bastion of pay-for-performance, much controversy surrounds debate about whether to grant financial incentives to public school teachers and government workers (e.g., Fryer, Levitt, List & Sadoff, 2012; Gupta & Shaw, 2014). Lively discussions about cultural applicability of merit pay have also accompanied trends toward merit pay in places such as Finland and Hong Kong, where longevity- and seniority-based provisions were long the norm (Mitra, Teniahlia, & Shaw, 2014). Resistance to performance-based pay persists despite many cross-culturally stable findings in the compensation literature (e.g., Du & Choi, 2010; Mattson, Torbiörn, & Hellgren, 2014). Finally, compensation levels for top management teams and executives, and pay levels for celebrities and athletes are endlessly fascinating (e.g., Trevor, Reilly, & Gerhart, 2012).

On the other hand, compensation research has been on a downward trend in applied psychology (Cascio & Aguinis, 2008; Gupta & Shaw, 2014). At the 2013 Society for Organizational and Industrial Psychology conference, for example, only 3 of 1,200 sessions were devoted to compensation-related topics (Gupta & Shaw, 2014). To reinvigorate research in this
area, I undertook an exhaustive review of the literature related to pay levels and pay changes in the domains of work psychology, I/O psychology, organizational behavior, and human resource management. Given the downward research trends, I cast a broad net for papers related to pay levels and pay changes and evaluated the literature over a 15-year period, from 2000 to 2014. I reviewed and evaluated the studies in terms of their conceptual and empirical antecedents and consequences. My review of the extant empirical and conceptual literature allowed me to draw some general conclusions about the findings and about the state of the literature. Based on these conclusions, I outline several areas of need and promising research directions.

In addition to the time frame, this review has some boundary conditions. I focused on individual-level research, those areas closest to the domain of industrial, work, and organizational psychology, although some of the papers appear in journals not typically associated with applied psychology. I mostly excluded research on the team-level and organizational consequences of compensation levels and structure, such as organizational performance outcomes associated with pay structure (e.g., Trevor et al., 2012; Shaw, Gupta, & Delery, 2001; 2002; Shaw & Gupta, 2007) and executive compensation, because those studies have been reviewed extensively elsewhere in recent years (e.g., Conroy, Gupta, Shaw, & Park, 2014; Gerhart & Rynes, 2003; Gerhart, Rynes, & Fulmer, 2009; Gupta, Conroy & Delery, 2012; Shaw, 2014). My review includes only studies in applied psychology that include information about pay levels or pay changes, and excludes studies that examine non-monetary and other forms of rewards. Studies on the antecedents of pay changes are so scarce that I did not include a separate section on the topic. The rare studies I found also examined pay levels as an outcome, so I assigned them to the pay level section. I also excluded studies that examined
consequences of compensation attitudes and that omitted data on actual pay levels of changes partly because of recent meta-analytic activity (Williams, McDaniel, & Ford, 2007; Williams, McDaniel, & Nguyen, 2006). Finally, I ignored the growing “money prime” literature that appears mostly in social (e.g., Zhou, Vohs, & Baumesister, 2009) and economic psychology (e.g., Pfeffer & DeVoe, 2009) outlets. I organized the review into two major sections—(1) the antecedents and consequences of pay levels, and (2) the antecedents and consequences of pay changes. I followed the review with a conclusion section that includes directions for future research.

**PAY LEVELS**

*Antecedents*

The major contributions to the empirical literature on the determinants of pay levels are a series of studies that primarily use the exhaustive, publicly available National Longitudinal Surveys of Youth (NLSY79) data set from the United States (e.g., Judge & Cable, 2011; Judge & Hurst, 2008; Judge, Hurst, & Simon, 2009; Judge, Klinger & Simon, 2010; Judge & Livingston, 2008). Perhaps the dominant theme in the literature on pay level determinants relates to the persistent pay gap between men and women. For example, in a study of government employees in the United States, gender was a stable predictor of pay levels (women earned less than men), even after controls for a set of job-related factors that explained two-thirds of the variance in pay levels (Harris, Gilbreath, & Sunday, 2002). Perhaps more surprising—gender related to pay increases such that women earned higher raises than men. The authors provided two potential explanations for the pay increase relationships. First, women in the sample earned higher performance evaluations than men did, which might explain the relationship
between gender and pay changes. The second argument and finding was structural: women more frequently occupied lower levels within the organization’s pay grades and received higher percentage pay increases as a result. The two factors—higher performance and lower pay grade positions—accounted for the relationship between gender and pay changes in their study.

The applied psychology literature, however, has moved well beyond direct examinations of the gender pay gap and toward nuanced explanations of why the gap persists. In a sample of more than 2,000 managers, the gender pay gap persisted in the presence of human-capital-based control variables (Ostroff & Atwater, 2003). But, as the authors predicted, characteristics of the managers’ reference group also significantly influenced pay levels: managerial pay levels were lower when managers’ referent groups were predominantly female and when coworkers were younger. Working with predominantly female referent groups negatively affected managerial pay levels and most prominently when subordinates were primarily women. Their findings also demonstrated substantial pay level penalties when a manager’s subordinates were either younger or older than prime working age (defined as around 40 years) or when a manager’s supervisor was younger than prime working age. The issue of mentoring and gender was examined in terms of total cash compensation in Ramaswami, Dreher, Bretz, and Wiethoff (2010). Taking a signaling theory view, they argued that women in male-dominated industries benefit most in terms of pay when they have a mentor who has high signal visibility. In line with their theory and controlling for a number of correlates to pay levels (e.g., age, prior career interruption, career priority, number of children, education), women who had a senior male mentor in male-gendered industries earned over $70,000 more per year than women without a senior male mentor in the same industries.
Judge and Livingston (2008) offered an alternative perspective on the gender pay gap. In their study a variety of background and demographic characteristics such as demography, intellect, and family background were found related to gender role orientation, or beliefs about proper roles for women and men at work and at home. The authors predicted that beliefs about proper gender roles would predict different pay levels over time for men and women. Among participants in the NLSY79 data set, gender role orientation was positively related to pay levels among men and negatively related to pay levels among women.

One fascinating study shows the dark side of procedural justice in explaining gender pay gaps. Belliveau (2012) argued that social accounts, explanations, apologies, or justifications for a decision could activate gender stereotypes prior to pay decisions. Managers are likely to believe that women will value procedural justice more deeply than men will, whereas men will attend to and value distributive justice more than women will. Consequently, managers “are likely to assume that men do not value procedural justice enough for social accounts to substitute effectively for high pay” (Bealliveau, 2012; p. 1156). In a laboratory experiment and a scenario-based study with practicing managers as participants, the study found that women were paid less than men when allocators could provide a social account for the decision; men were paid less than women when no social account opportunity was available. In addition, the differences were even stronger among allocators who had more managerial experience.

A study of the relationship between physical weight and pay levels for men and women among samples of German and American workers (Judge & Cable, 2011) found that among German employees, weight was negatively related to annual pay level among women and curvilinear in the shape of an inverted U among men. Men suffered substantial wage penalties
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for being very thin or very heavy, but the penalty for thinness was much more substantial. Very thin women enjoyed a strong wage advantage and very heavy women suffered a strong wage penalty. The results were similar for women in the U.S. sample: weight and pay levels were negatively related among women, but the weight–pay level relationship was strongly positive and slightly attenuated at high weight levels. The results were observed after accounting for job characteristics and personal characteristics such as height, age, race, education, and family background; habits such as smoking and drinking; and family status such as number of children and spouse’s wages.

A final study on gender and pay levels showed rare evidence of reversals of the gender pay gap. Leslie, Manchester, and Dahm (2014) examined whether the emphasis placed on achieving diversity goals would cause “high-potential” women in the upper echelons of organizations to reach higher pay levels. The authors predicted that when organizations deemed women to have high potential for performance, the organizations would value those women more highly than they valued high-potential men. As a result, the pay system in general would favor normal-potential men, but high-potential women would be favored over high-potential men. In a field study among managerial employees of a Fortune 500 organization, the authors found that leadership performance and potential ratings from organizational records were related to pay levels, although task performance ratings were not. They found further that gender interacted with potential ratings in predicting pay levels. Among low-potential employees, women earned $.92 for every dollar earned by men. But, among employees the organization rated as having high potential, women earned $1.07 for every dollar earned by men. In a second experimental study, the authors found a similar reversal of the gender pay
gap among high-potential women. Furthermore, participants’ ratings of the perceived value of diversity in higher-level positions explained the relationship.

In an examination of ethnicity issues and pay levels, Avey, West, and Crossley (2008) drew on social categorization theory to investigate whether ethnicity in supervisor–subordinate dyads would predict organizational advancement and pay levels and whether congruence in ethnicity and subordinate pay levels would be more strongly related in merit-pay rather than seniority-pay systems where supervisors have more control over subordinate pay levels and promotions. They found support for the interaction of ethnic congruence and pay systems in predicting organizational advancement but not for predicting overall salary level. In particular, they found a significant, positive main effect of ethnic congruence in supervisor–subordinate dyads on the achieved organizational level of subordinates. They found further that the level difference was wider in merit-based systems than in seniority-based systems. Their findings tended to support pay level differences as well. Subordinates in congruent dyads made more than $3000 over the salaries of subordinates in incongruent dyads, but the difference was statistically nonsignificant at conventional levels.

Three additional studies examined the relationship between individual characteristics and pay levels. In the first study, Judge and Hurst (2008) examined the relationship between the meta-construct core self-evaluations (CSE) and work success. CSE comprises the personality dimensions of self-esteem, self-efficacy, neuroticism, and locus of control (Judge, Erez, Bono, & Thoresen, 2002). Using the NLSY79 data set, the authors argued and found that pay levels increased more rapidly over time among those scoring higher on a CSE measure (as did job satisfaction and ratings of occupation status). Furthermore, for high-CSE individuals compared
with low-CSE individuals, higher educational attainment partially explained steeper pay level trajectories and fewer self-reported health problems. In the second study, Judge et al., (2009) showed a somewhat different causal sequence. They expected general mental ability (GMA) but not CSE to be associated with pay levels through educational attainment as a mediator. In contrast, they expected physical attractiveness to be positively associated with pay levels via CSE as a mediator. Their two-wave sample of workers in the northeastern United States indicated partial mediation: educational attainment explained a significant portion of the relationship between GMA and pay levels, and CSE scores explained part of the direct relationship between attractiveness and pay levels.

In the third study, Judge et al. (2010) argued that GMA would moderate the relationship between elements of accumulated human capital and pay levels over time. They expected more intelligent individuals to be better able to capitalize on or translate their human capital, conceptualized as educational attainment, training, and job complexity, into higher pay. The authors found steeper trajectories between human capital and pay levels for high GMA individuals. Over time, higher- GMA individuals had steeper earning growth and human capital accumulations, with education and job complexity, but not training, mediating the relationship between time and pay levels.

Two studies examined performance-related issues and pay levels among players in the U.S.-based National Basketball Association (NBA). One study considered three conceptualizations of performance—mean performance, performance variability, and maximum performance (Barnes & Morgeson, 2007). When entered into separate equations, typical performance (positive), variability (negative), and maximum performance (positive) each
related to pay levels (total contract value), but only typical performance and performance variability remained significant in an omnibus equation. The second study (Barnes, Reb, & Ang, 2012) was an examination of the relationship between typical (mean) performance, performance trend (whether a player’s points per game increased or decreased over the study’s time window), and performance variability and the performance increase or decrease in new contract value. They found performance mean and trend to be positively related to the change in contract value, but variability was not related. In additional analyses, the authors found that the relationship between mean performance and pay change disappeared after controlling for future performance (average points scored in the duration of the subsequent contract). But the relationship between performance trend and pay change persisted in the presence of future performance control. The authors reasoned that NBA owners place too much emphasis on trends when assigning new contract value.

A study of the social networks of commercial bankers moved beyond individual characteristics and performance levels. Mizruchi, Stearns, and Fleischer (2011) reasoned that bankers who had sparse information networks among their peers could access better information, especially if the sparse connections were strong ties. The authors offered a similar set of predictions for networks with superiors, which they labeled approval networks. Tests using an ego-centric approach for measuring banker networks yielded significant interactions. The authors did not provide graphs of their significant interactions, but plots of the coefficients involved in the interactions showed that those who had strong ties and dense, rather than sparse, networks received the highest bonuses, which was contrary to the authors predictions. Their results are interesting in that the social network variables predicted bonus levels beyond
controls for banker performance or prior bonus levels. But the direction of the effects and the
conclusions to be drawn about network density or sparseness and tie strength remain unclear.
Future researchers should address those issues.

Consequences

For pay level, studies of pay level consequences concerned mostly work-related
attitudes, including compensation or pay satisfaction and more general attitudes such as job
satisfaction and organizational commitment. These studies are few in number, perhaps because
of two meta-analyses of the predictors of pay satisfaction which appeared during the time
frame of this review (Williams et al., 2007; Williams et al., 2006).

Pay levels and compensation attitudes. The literature offers consistent evidence that
pay levels are related to pay satisfaction, other compensation-related attitudes (e.g., pay
fairness), and forms of employee withdrawal (Shaw, Delery, Jenkins, & Gupta, 1998; Williams et
al., 2006). For example, the meta-analytic correlation between pay level and pay satisfaction
was .29 in Williams et al.’s (2006) analysis. As a result, the studies focusing on attitude-related
outcomes of base pay tended to focus on the mechanisms between base pay levels and
compensation attitudes, or contextual moderators.

In line with Williams et al.’s (2006) meta-analysis, Harris, Anseel, and Lievens (2008)
examined the relationships among base pay, social comparisons, and pay level satisfaction.
They expected base pay to relate positively to pay satisfaction and also that social comparisons
about pay levels would explain variation in pay satisfaction above and beyond base pay and
also interact with pay in predicting satisfaction. They sampled U.S. and Belgian workers and
found that pay level was positively related to pay satisfaction. Upward comparisons (the
perceived pay levels of a higher-paid group) were negatively related to pay satisfaction in both samples. Among U.S. participants, pay level and upward comparisons interacted to predict pay satisfaction: pay satisfaction was highest among those whose actual pay level matched the level of the perceived upward comparison group. In line with traditional equity theory arguments, pay satisfaction was lower when pay levels fell short of upward comparisons and when they exceeded upward comparisons, but the former effect was stronger.

In a similarly ambitious study, Trevor and Wazeter (2006) examined a large sample of U.S. school teachers to determine whether pay levels, pay relative to internal referents, and the overall pay structure combined to relate to pay equity perceptions. They found that internal standing—individual pay level divided by the average pay in the district—moderated the relationship of pay structure to pay equity. For widely dispersed structures, those with high internal standing reported high equity perceptions; those low in internal standing reported low equity perceptions. Results also revealed how individuals evaluate pay equity in terms of their internal standing (pay relative to the average in a teacher’s district) and external standing (pay relative to the average pay levels of teachers in adjacent districts). The results suggested that internal pay standing matters more in terms of pay equity when the district is low-paying on average than when the district is high-paying on average. Park (2014) showed further that individuals’ reactions to pay differentials was moderated by whether they were promotion (concerned with gains) or prevention (concerned with losses) focused. High (low) equity perceptions were reported when pay differentials were wide and individuals were promotion (prevention) focused.
Curhan, Elfenbeing, and Kilduff (2009) studied later impacts on compensation satisfaction, job satisfaction, and turnover intentions emanating from the subjective and economic value of job offer negotiations including base pay levels, relocation allowances, debt refinancing, training, and vacation. They defined subjective value of negotiations as a broad construct of perceptions as to whether the negotiations were fair, whether individuals lost face or behaved appropriately in the negotiations, whether the negotiation was desirable and legitimate, and whether the negotiators were trustworthy. Base salary and subjective value related positively to later pay satisfaction levels, but the economic value of other negotiable items did not. Subjective value also positively related to overall job satisfaction and negatively related to turnover intention, but base salary and economic value did not relate to those general attitudes. Because aspects of justice and pay outcomes are strongly correlated (Shaw, 2014), it is not surprising that a subjective value including a strong justice component was strongly associated with pay satisfaction. The differential pattern of results between pay satisfaction and general attitudes such as job satisfaction and intention to quit are provocative in any event. Future research should perhaps disentangle the subjective value components and examine whether fairness, self-esteem, process, and instrumentality independently or only jointly relate to compensation and general work attitudes.

Two other studies tried similarly to link pay-level variables to outcomes such as fairness, commitment, performance, and turnover (Tekleab, Bartol, & Liu, 2005). The studies correlated pay levels with dimensions of justice and a distal behavioral outcome—turnover. They argued that distributive justice perceptions would be more strongly related than procedural justice perceptions to base pay levels. They also suggested that pay level satisfaction would mediate
distributive justice perceptions, and pay raise satisfaction would mediate procedural justice perceptions. Finding considerable support for their hypothesized model, the authors advanced the literature by partially testing a differential process model and elucidating the relationships between pay levels, pay raises, and important workplace outcomes such as turnover. The study was limited in that pay raise information was not available, so they could not examine one of the first steps in the implied causal sequence: the relationship between pay raises and procedural justice.

Departing from psychological studies, Kuvaas (2006) reasoned that pay levels rather than performance-based pay could relate positively to work performance through intrinsic motivation as mediator. The choice of pay levels rather than pay changes as a motivational tool is interesting, but so too is the mediating mechanism. Cognitive evaluation theory (Deci & Ryan, 1985) has long implied that extrinsic rewards such as pay levels or incentives reduce intrinsic motivation and work interest, although recent research entirely debunked that contention (Gerhart & Fang, 2014). Kuvaas (2006) argued that high base pay signals that employees are “trusted to continue to perform well without being externally regulated or controlled by shorter-term performance contingencies, which may strengthen their perceptions of autonomy and self-regulation” (p. 369). He sampled employees in a Norwegian energy company and found that base pay, but not bonus levels, related to affective commitment and self-reported measure of work effort (see also, Tenhiälä & Lount, 2012). Furthermore, reports of intrinsic work motivation partially mediated the relationships.

A final study in this set examined whether base pay and perceptions of self-efficacy would relate to pay satisfaction in a sample of employees in several Korean companies (Kim,
Pay levels and pay changes (Mone, & Kim, 2008). Pay level was found to be positively related to pay level satisfaction, but not to other aspects of pay satisfaction (benefits and structure/administration). Controlling for pay level, self-efficacy perceptions related negatively to pay satisfaction dimensions. Self-efficacy also interacted with perceptions of the link between pay and performance (PFP perceptions), although the results showed the highest satisfaction levels among low self-efficacy individuals who believed that pay was not related to performance. Those results were not as predicted.

Pay levels and general job attitudes. Lambert (2011) and Irving and Montes (2009) took met-expectations approaches to the study of pay levels and job attitudes. Irving and Montes (2009) evoked Warr’s (1987) vitamin model in predicting that pay levels in excess of expected levels would continue to relate positively to employee satisfaction. Warr (1987) explains that very high levels of vitamins such as C and E and certain minerals have beneficial, or perhaps non-negative, effects on humans, but vitamins such as A and D can be harmful in excess. Irving and Montes (2009) offered pay levels and support as analogous to vitamins C and E, and skill development opportunities as analogous to vitamins A and D: they predicted that satisfaction would increase as pay levels approached expected levels but that reported satisfaction levels would be even higher as pay levels exceeded expectations. When decomposed, their reasoning fails to suggest an interaction between expected and received pay levels, but rather independent or additive effects with opposite signs. Received pay levels should be positively related to job satisfaction, while expected pay levels should be negatively related. They found that pattern in their study, although compensation and satisfaction had a positive relationship that was much stronger than the negative relationship between expected compensation and
satisfaction. Lambert (2011) examined the same issues in an experimental study using psychological contract breach as the organizing framework, with results yielding a very similar pattern of findings—delivered pay was positively related to participant reports of satisfaction, and promised pay was negatively related. Aletraris (2010) returned to gender study in the context of pay levels, but focused on the satisfaction-related outcomes of temporary versus permanent work positions. Using a large nationally representative panel of workers in Australia, she found that temporary workers reported lower levels of satisfaction than did workers in permanent positions, as expected. Various work characteristics such as skill utilization, control, autonomy, job stress, and job security mediated the relationship. Pay level did not significantly predict satisfaction, nor did it mediate the relationship. In supplemental analyses, however, she showed that pay level was negatively related to job satisfaction among women and was one of multiple mediators of the relationship between temporary work status and satisfaction. She reasoned that pay levels may have served as a proxy for “bureaucracy, more peer-competition, or larger workloads” (p. 1147) in her sample, which may have resulted in a negative relationship between pay and satisfaction.

Gardner, Van Dyne, and Pierce (2004) looked at the relationship between pay levels and organizational-based self-esteem (OBSE), or individual’s self-perceived value as a member of a specific organization. In a multi-wave study of employees at a construction company, they found that pay levels obtained from worker records related to OBSE and supervisor-rated performance. Furthermore, OBSE mediated the relationship between pay levels and performance. Their results go beyond most research on consequences of pay levels, which tend to focus on job attitudes as the distal outcome. They show some potential performance
benefits via more favorable job attitudes. Their results also align with Thierry’s (2001) reflection theory of pay which suggests that pay levels inform individuals about themselves on various dimensions; that is, pay serves somewhat as a mirror. The organizational literature has rarely tested this theory (for exceptions see Salimäki, Hakonen, & Heneman, 2009; Shaw & Jenkins, 1995), but advances our understanding of the relationship between pay level and performance-related outcomes.

**CONSEQUENCES OF PAY CHANGES**

*Pay changes and performance.* A comprehensive meta-analysis (Jenkins et al., 1998) resolves a long-standing debate about the relationship between financial incentives and performance. Several decades of research cumulatively revealed that financial incentives and performance quantity were significant, positive, and moderate in magnitude (rho = .34). Only six studies in the meta-analysis addressed the relationship between financial incentives and the quality of performance. The estimated correlation for performance quality from this small set of studies was not significantly different than zero, but had a positive sign. Recently, an updated meta-analysis included more recent research and a slightly less restrictive set of inclusion criteria (Garbers & Konradt, 2014). This brought considerably more studies into the analysis. The results were, however, nearly identical for performance quantity—the meta-analytic correlation was .28 between financial incentives and performance quantity. The study’s major contribution was the demonstration of a larger correlation (rho = .39) between financial incentives and performance quality, although the total number of studies analyzed remained rather modest (k = 10). Thirty-five additional studies had a performance metric that could not be classified as based on quantity or quality. The financial incentives association with these
“mixed” performance outcomes was also robust (rho = .38). In line with Fang and Gerhart (2014), the results of these meta-analyses should quell suggestions that financial incentives are not positively related, or even negatively associated, with work motivation and performance. They demonstrate significant and stable positive associations with quantity, quality, and mixed performance outcomes.

A set of additional studies extended the basic proposition that financial incentives and performance are positively related and uncovered new theoretical and practical moderators of the relationship. Most of the studies took an agency theory view, which assumes that managers can choose between offering incentives or monitoring behavior to elicit high performance. Young, Beckman, and Baker (2012) studied whether pay-for-performance would increase performance among a sample of practicing medical doctors. Tracking performance regarding the use of a new screening tool for diabetic patients, they found that financial incentives were positively related to physician performance, but the effects were stronger among physicians who believed the new system still allowed them autonomy and among those who believed the incentive had a “clinically meaningful” outcome (Young et al., 2012; p. 973). An experimental laboratory study (Fong & Tosi, 2007) touched on similar themes of incentives, performance, and personal control. The authors argued that incentives would be more strongly related to performance among participants who were low in conscientiousness. Highly conscientious Individuals are characterized as achievement oriented, dependable, persevering, and deliberate. The authors argued that agency theory’s incentive alignment effects would be weaker among highly conscientious participants. They found effort and performance levels to be high across conditions among highly conscientious participants, but financial incentives were associated
with significant effort and performance improvements among less-conscientious participants. They concluded that incentive alignment is more important for less-dependable or less achievement-oriented individuals.

Also from the perspective of agency theory, Cadsby, Song, and Tapon (2007) examined the sorting effect of performance-related outcomes and worker preferences for such systems. An experimental study of students solving anagrams supported predictions that prior performance would relate positively to preference for pay-for-performance and that pay-for-performance would yield higher productivity. They predicted further that risk aversion would moderate both relationships: risk aversion would mitigate the relationship between prior performance and preference for pay-for-performance and between pay-for-performance and future performance. Their results supported the future performance attenuation, but not the selection effect attenuation. In particular, those operating under pay-for-performance generally performed better, but the highly risk-averse performed worse.

Nyberg, Pieper, and Trevor (in press) sought to integrate economic and psychological theories on the relationship between financial incentives and performance. They examined moderators of relationships between two types of pay-for-performance—merit pay and bonus pay—and job performance. They provided several interesting insights into how individuals react to financial incentives. First, they found that bonuses had stronger incentive effects for those who received small merit pay increases (annual increases to base pay). Also, bonuses had stronger positive effects on employee performance among short-tenured employees, and incentives (merit pay and bonuses) had stronger effects among employees who lacked substantial bonuses or merit increases in the past (i.e., the bonus/merit trend was low). The
findings underscore that financial incentives and performance are positively related, but suggest two important implications for theory and compensation practices. First, multiple incentive systems operating concurrently may add little value because merit pay and bonuses have consistent substitution effects. Second, interactions between incentives and prior trends suggest that employees who have received larger raises or bonuses in the past (stronger prior trends) may view incentives as entitlements, so the motivational power diminishes with time.

Pay changes and creativity/innovation. A few studies have heeded calls for additional studies on the relationship between incentives and creativity. The accumulated evidence here remains rather sparse and, in general, the studies reported below do not examine directly the relationship between merit increases or bonuses and employee creativity. The results are suggestive, however, and can be used as a foundation for future studies.

Lee, Edmonson, Thomke, and Worline (2004) examined whether perceptions of rewards for experimentation and organizational normative values for experimentation would predict actual experimentation behavior. They argued that evaluative pressure—the degree to which salient others were judging rather than enabling performance—would further moderate the effect. High evaluative pressure had a congruence effect; highest levels of experimentation behavior occurred when rewards and organization values encouraged experimentation. Low normative pressures and misalignment of rewards and values encouraged higher experimentation. Also low normative pressures with concurrently low rewards and values yielded very low experimentation levels.

Eisenberger and Aselage (2009) sought to understand the mechanisms affecting performance-based pay and individual creativity. Across three studies, they tested an
increasingly more elaborate path model. In an initial study, they argued and found that perceptions of pay-for-performance were associated with greater pressure to perform as well as self-determination and that these perceptions, in turn, were related to higher intrinsic interest in work. In a second study, they observed support for the initial path model, but also showed that self-reported intrinsic interest was positively associated with a supervisor-rated measure of creativity. They replicated the full path model in a third experimental study. Overall the results provide evidence of dual pathways between pay-for-performance, intrinsic interest, and creativity, via higher perceived pressure to perform, but also increased self-determination. Although Janssen (2000) did not focus specifically on pay changes, perceptions of the fairness of pay-for-performance moderated the relationship between an omnibus measure of job demands (e.g., pacing, time pressure, workload) and innovative work behavior. The interaction was such that job demands were positively related to innovative work behavior under high perceptions of fairness of pay-for-performance. This pattern held for both self- and supervisor-rated measures of innovation.

McLeod (2011) conducted a clever study of electronic brainstorming as a function of whether experimental participants received low, medium, or high levels of performance-based rewards and whether the rewards were anonymous or could be compared with others in the experiment. She found high effort (the number of electronic brainstorming suggestions) when reward recipients could be identified and even higher when rewards could be compared with others. She also rated the suggestions for feasibility and creativity. The predicted positive effects for the outcomes were not supported; indeed, some evidence weakly indicated that anonymous reward conditions encouraged more creative ideas. The findings for creativity were
perhaps not surprising given that study instructions encouraged participants to generate ideas, but did not encourage them to offer feasible or creative suggestions. In line with these findings, future research on financial incentives and innovation could also be viewed from the perspective of learning and informed potentially from the literature on learning effects, for example, from studies of reactions to skill- and competency-based pay programs (Dierdorff & Surface, 2008; Mitra, Gupta, & Shaw, 2011; Shaw, Gupta, Mitra, & Ledford, 2005).

Pay changes and job attitudes. In a series of field and experimental studies, Grandey, Chi, and Diamond (2013) found that performance-contingent rewards were positively associated with the satisfaction that workers experienced when performing emotional labor, or the positive emotions that individuals must display while working in service-oriented jobs. Another set of studies focused on how dispositional affectivity—namely positive and negative affectivity—influenced reactions to performance-based pay changes. The studies were based on Gray’s (1970) theory, which suggests that behavioral activation and behavioral inhibition systems reflect dispositional tendencies to be sensitive to reward and punishment signals, respectively. Positive (PA) and negative affectivity (NA) (or extraversion and neuroticism) are seen as primary markers of the sensitivity to reward and punishment signals (Larsen & Ketelaar, 1991). In an early study, Shaw, Duffy, Jenkins, and Gupta (1999) evoked Gray’s (1970) theory and argued that because those higher in PA are more sensitive to reward signals, the between-persons relationship between pay levels and subsequent job attitudes would be weaker than the relationship between pay levels and attitudes among those low in PA. In essence, high PA individuals “pick up” or notice even small reward signals in the environment and react positively to them, whereas low PA individuals a need a larger reward signal to detect and react.
positively. Shaw et al. (1999) found some support for these interactions using base pay level as a proxy for reward signal, but noted that a truer test would involve pay changes. Shaw, Duffy, Mitra, Lockhart and Bowler (2003) built on the prior study and examined reactions to merit pay increases among a sample of employees at a university hospital. In line with the signal sensitivity perspective, they found a generally high relationship between pay raises and attitudinal outcomes (and self-reported work effort) across pay raise levels among those high in PA. In contrast, a positive and significant relationship occurred between pay increases and outcomes among those low in PA—low PA individuals failed to react positively to weak reward signals; only large reward signals elicited their positive reactions.

In a recent extension of the signal sensitivity perspective, Brosi, Spörrle, Welpe, and Shaw (2013) argued that reward signal sensitivity could be further refined by examining reactions to small and large rewards using a within-person design. They found that when high PA individuals received very small rewards, they had amplified perceptions regarding the magnitude of the payments, but as reward size increased, their reactions hit a ceiling. For low PA individuals, reward size and subjective magnitude perceptions had a much weaker relationship across the range of very small rewards, but a stronger relationship across the range of large rewards, consistent again with the signal sensitivity perspective. Those authors advanced the signal sensitivity perspective further by examining whether PA moderated the relationship between the rewards others received and subjective magnitude. They also found support for this “rose-colored glasses” prediction: high PA individuals evaluated their own rewards more favorably than they evaluated rewards received by others. The PA interaction
effect was “mainly driven by low-PA individuals, who pessimistically evaluated others’ rewards as being larger than their own” (p. 110).

Begley and Lee (2005) further extended the findings on signal sensitivity theory by examining how dispositional NA moderated the relationship between potential pay reductions—a type of punishment signal—as the organization transitioned to a new pay system. In line with Gray’s (1970) theory, they predicted that PA would have no bearing on potential pay reductions because, as a form of reward signal sensitivity, it would operate on a separate continuum than punishment signals. Rather, NA would moderate the relationship between pay-at-risk and attitudinal reactions: the relationship would be stronger among low-NA individuals. In essence, high-NA individuals, being sensitive to punishment signals, would “pick up” and react negatively to even small punishment signals, while low-NA individuals would need larger punishment signals to evoke negative reactions. Their results from a large sample of employees of a consumer products company supported the predictions.

Shaw and colleagues (Schaubroeck, Shaw, Duffy, & Mitra, 2008; Scott, Shaw, & Duffy, 2008) conducted two studies of the relationship between merit pay and job-related attitudes using the same multi-wave sample of employees at a university hospital. Schaubroeck et al. (2008) developed and tested a met-expectations model of reactions to merit pay increases. The authors drew on social psychological theories of surprise and argued that perceptions of control—operationalized by pay-for-performance perceptions—would determine whether individuals would react strongly or weakly to undermet and overmet expectations. The theory suggested that when individuals lack control over their circumstances, overmet expectations are more surprising and hence evoke strong positive reactions (albeit short-lived), but reactions
to undermet expectations are muted. In situations of personal control, undermet expectations were predicted to be devastating, but overmet expectations were expected to be met with only pleasant surprise. In essence, overmet expectations (windfall gains) are more surprising when outcomes are believed to be chance occurrences, but undermet expectations are more surprising when outcomes are believed to be tied to actions. The tests were conducted before and after the administration of merit pay increases with measurements separated by 8 months. They found support for the predictions that when individuals had high perceptions of control, undermet expectations would be associated with negative job attitude and effort reports several months after pay increases were awarded. The predictions related to surprise and lack of control were not supported; overmet expectations were not associated with euphoria when individuals lacked control.

Scott et al. (2008) examined the interactive relationships among pay raises, pay-for-performance perceptions, and employee age in predicting organization-based self-esteem (OBSE), or individuals’ evaluations of their worth within the organizational context. They predicted, based on sociological theory, that older individuals would have a greater need to derive meaning from the work domain because they have narrower life interests and horizons compared with younger workers. From this perspective, among older individuals, high raises from legitimate or fair systems would have strong positive implications for OBSE, and raises presumed to be unfair or not legitimate would have negative implications. For younger individuals, raise levels were not expected to predict OBSE levels, regardless of procedural justice concerns. The findings were in line with predictions. Among older individuals in the sample, merit raises were positively (negatively) associated with OSBE when pay-for-
performance perceptions (the procedural justice of the pay system) were high (low). Younger individuals showed no discernible pattern between raises and OBSE.

A final study in this section examined whether perceptions of justice mediated the relationship between gainsharing—bonuses based on group-level productivity—and general job attitudes (Kwon, Kim, Kang, & Kim, 2008). The authors conducted cross-level tests of the prediction among employees in five companies that used gainsharing to supplement a seniority-based system and five companies that did not. The variance on pay changes—the presence or absence of a gainsharing plan—was admittedly quite coarse and did not include variance on bonus sizes. Nonetheless, the authors found some support for the predicted mediation model. They reported that distributive and interactional justice, but not procedural justice, partially mediated the relationship between gainsharing and two job attitudes—pay satisfaction and job satisfaction.

Pay changes and antisocial behavior. Salin (2003) contributed a broad-ranging conceptual paper on the organizational and structural antecedent of bullying, or repeated and persistent negative acts toward one or more individual(s) that involve a perceived power imbalance and create a hostile work environment (Zapf, Knorz, & Kulla, 1996). She described a set of motivating structures and processes that would be positively associated with bullying and, by extension, other forms of antisocial behavior. She suggested that certain reward practices encourage antisocial behavior through rational rent seeking processes—behavior that allocates more benefits to certain individuals. In particular, depending on how extensively the reward system distinguished among individuals based on relative ranking, certain individuals would obtain more rents by engaging in bullying behavior. Beyond individual incentives, she suggested
that certain team-based financial incentives could also lead to bullying via punishment of low-performing members. Samnani and Singh (2014) expanded on Salin’s (2003) initial ideas and developed a more specific conceptual model of the relationship between pay-for-performance and bullying behavior. In their model, they focused on what they termed “zero-sum” pay-for-performance systems, in which higher rewards for some mean necessarily lower rewards for others. Under these conditions, they argued that increased work stress and higher individual competition will cause individuals to proceed along different emotional and behavioral pathways. Reward systems that induce higher stress and competition are likely to generate more bullying. The resulting performance effects in the model are positive for the bullying perpetrators, but negative for targets. The performance implications are likely to create a feedback loop beginning in the administration process for performance-based rewards in the next cycle.

The applied psychology literature rarely offers tests of the conceptual models from Salin (2003) and Samnani and Singh (2014). Ferrin and Dirks (2003), however, conducted an experimental study of reward structures, interpersonal and antisocial behavior, and trust. They argued that competitive reward structures would generate a variety of processes and biases, including correspondence bias (the tendency to draw inferences about personal characteristics based on situational factors), suspicion, cognitive schemas, and expectations. They found that competitive rewards positively related to lying behaviors, for individuals and their partners, in a decision-making task, and a tendency for both parties to withhold information. Furthermore, behavior on the individual level affected perceptions of dyadic trust, but not on the partner level. They also examined whether initial trust perceptions played a moderating role; they
found that under high initial trust, trust levels in mixed-reward situations (a combination of competitive rewards and cooperative rewards) were similar to the trust patterns observed for pure cooperative rewards. In essence, in a mixed-reward situation, individuals who initially trust one another will emphasize the cooperative aspects of the rewards system, but when they initially distrust each other, they attend to the competition-based aspects of the structure.

Two recent studies of economic behavior also provide insights relevant to the antisocial behavior models. Gill, Prowse, and Vlassopoulos (2013) compared productivity in two fixed pay level conditions and a bonus pay condition in an experimental design. They assigned bonus pay randomly, and therefore the condition was similar to the notion of unexplained pay variation shown clearly to have negative implications for worker attitudes and behaviors (Shaw, 2014; Shaw et al., 2002). Although individuals in the random bonus condition would be expected to perform better than those in fixed pay or control conditions given that the bonuses were not tied to performance, they did not. In addition, those who received random bonuses cheated more than those in other conditions. The design did not tie performance levels to bonuses, so the results say little about the relationship between financial incentives and performance, or about the zero-sum compensation designs and internal competitions that Salin (2003) and Samnani and Singh (2014) discussed. They do show, however, that individuals react negatively to unexplainable compensation decisions, a finding well established in the applied psychology and organizational literature for many years. This paper contributes, however, by showing cheating behavior to be among the likely outcomes of unfair compensation designs.

Pascual-Ezama, Prelec and Dunfield (2013) performed an experimental study examining incentives, performance, and cheating. Unsupervised study participants who were offered
financial incentives or social rewards (being announced as competition winners) cheated more (declaring work done when it was not) and performed better. Contrary to agency theory explanations for individual reactions to incentives, unsupervised participants performed better in reaction to rewards, but only when they reported high levels of intrinsic motivation. Those findings are again counter to CET’s popular notion that financial incentives reduce intrinsic motivation. Generally, individuals reacted more dishonestly to financial incentives if part or all of the incentive encouraged cheating or other antisocial acts. Also, cheating was higher among those receiving social rewards or recognition than among those receiving financial rewards.

Those two conceptual and empirical studies offer provocative propositions and findings. However, researchers appear to be just now scratching the surface in terms of understanding how financial incentives schemes and pay changes relate to forms of antisocial behaviors such as bullying and dishonesty. I return to those issues in my conclusions.

Pay changes and other outcomes. A small set of studies examined the relationship between financial incentives and other work-related outcomes at the individual level. Schmidt and DeShon (2007) examined whether incentives changed the priorities that experimental participants gave to concurrent goals. They found that when incentives were provided for completion of two tasks, individuals tended to prioritize the goal that was furthest from completion, but when incentives were provided for only one task, the rewarded task took priority. Those general findings align with research showing that individuals tend to focus on narrow sets of behaviors that are rewarded (Gupta & Shaw, 2014). Schmidt and DeShon (2007) found further that incentives had differential effects on goal prioritization when the goals were framed as avoidance-related (undesired end states are to be avoided) or approach-related
(desired end states are to be gained). In particular, when incentives were offered for goal completion, participants spent more time on the tasks with avoidance framing than they spent on tasks framed as approach-oriented, which is consistent with a stream of psychological and economic literature showing that individuals weigh potential losses more heavily than they weigh potential gains.

Mattson et al. (2014) researched the relationship between bonuses and safety behaviors. Their qualitative study was notable in its setting: three Swedish nuclear power plants. The study compared the potential safety implications of bonus systems with different plant features. For example, Plant A’s program emphasized quality goals over economic goals at the plant level (75%). Plant B emphasized economic and quality goals in equal proportions and mostly at the group level rather than giving plant-wide or individual-level bonuses. Plant C heavily emphasized individual quality goals (40%). In each plant, employees were rewarded for behavior that “focused on competence and process development as well as safety-related issues” (p. 21). The authors used a set of transcribed semi-structure interviews and conducted a theory-led thematic analysis. They drew several conclusions about safety-related concerns after systematically evaluating the evidence. First, employees in Plant A were primarily indifferent to the bonus plan, but the authors concluded that indifference posed little threat to safety. Plant B, emphasizing group-level goals, reported the highest levels of satisfaction with the system and the lowest levels of conflict. The authors reasoned that increased cooperative behaviors would promote safety. Plant C’s individual-level focus had the potential for creating discontent, frustration, and perhaps workplace envy. But the authors concluded that system characteristics,
specifically the individual-level bonus payment, were perhaps too small to be noticed (Mitra et al., 2014), mostly negating the day-to-day impact.

Nyberg (2010) and Allen and Griffeth (2001) examined how pay-related variables moderated job performance and turnover behavior. Nyberg (2010) tested whether actual pay growth, perceptions of whether pay and performance were related, and promotions weakened the relationship between performance and turnover behavior. Analyzing a large sample of insurance company employees over a 3-year period, he found that pay growth strengthened the relationship between job performance and the survival rate of employees. Employees were least likely to quit when they performed well and had substantial pay growth (percentage increases) over the study window. A similar relationship was found when employees were promoted within the study window. Contrary to expectations, perceived pay-for-performance did not moderate the performance–turnover relationship. Nyberg (2010) found further that job satisfaction mediated the direct relationship between performance and turnover, although it did not appear to mediate the moderated effects of pay growth and promotions. Similarly, Allen and Griffeth (2001) proposed that job satisfaction would mediate the relationship between job performance and turnover behavior. Furthermore, reward contingencies, or the belief that pay and performance were related, would moderate the relationship between job performance and satisfaction. Unlike the Nyberg (2010) study, Allen and Griffeth (2001) found support for the moderation of perceived performance-based rewards. Although their study predates new techniques for testing moderated mediation, the results imply that the negative indirect relationship between performance and turnover via job satisfaction should be stronger when pay levels are tied to performance.
Greenberg (2006) extended the study of pay changes into the realm of behaviors outside work. In a quasi-field experiment, he tracked sleep patterns for nearly 500 nurses at four hospitals, two of which underwent pay reductions after a nursing policy change. Supervisors in two of the hospitals received training in ways to promote interactional justice prior to the pay change. After developing a stress-based theory of reactions to the payment, he found higher levels of insomnia among nurses in the two hospitals where pay levels had been reduced, as expected. Also as predicted, he found that the positive relationship between pay cuts and insomnia were partially alleviated among nurses in the hospitals where supervisors had been trained in ways to improve interactional justice. Insomnia levels were low in the two sites that escaped pay cuts, regardless of whether employees had received interactional justice training.

CONCLUSIONS

Summary and Observations

More than 20 years ago, Lawler and Jenkins (1992) described the compensation literature as uneven, noting that certain areas were well-researched and other areas were essentially ignored. In many ways, the same description can be applied to the literature today. Researchers have offered various reasons for the downward trend in pay-related applied research. One possibility is that researchers may view certain research questions in the financial incentives literature as being self-evident and may pursue other research questions that appear to be more interesting. A second observation on the downward trend is that most studies appearing in this review were conducted by researchers who would not necessarily be called compensation researchers. Rather, they appear to be interested in general research questions
or theories that they test in the arena of pay or financial incentives. Relatively few individuals from the major applied psychology associations such as the Society for Industrial and Organizational Psychology and the Academy of Management seem to identify themselves as compensation researchers. A final explanation is that researchers face difficulty in collecting pay-related data in organizational settings. Although pay secrecy in the United States is legally disputable (e.g., Bamberger & Belogolovsky, 2010), pay secrecy is formally and informally common. Negotiating with organizations for release of pay-related data can be especially challenging. Pay data may be obtained from employee reports of their pay levels, but individuals generally tend to be sensitive about disclosing pay-related information. A number of studies have been conducted in public university settings or among public school teachers where pay data are publicly available (e.g., Schaubroeck et al., 2008; Shaw et al., 2003; Trevor & Wazeter, 2006), but these contexts are limited in terms of the types and sizes of incentives offered. The difficulty of obtaining data, in toto, may cause more researchers to focus on topic areas where data collections are more feasible.

Despite the relative paucity of research on pay levels and pay changes compared with topics in other areas of industrial, work, and organizational psychology, this review confirms that progress has been made in the last 15 years. In particular, we have much more extensive knowledge of the determinants of pay level, largely on the weight of Judge and colleagues’ investigations of personal characteristics, personality, and attributes in large-scale, longitudinal studies across the working lives of individuals (e.g., Judge & Hurst, 2008; Judge, Hurst, & Simon, 2009; Judge, Klinger & Simon, 2010; Judge & Livingston, 2008). The literature also provides much needed, nuanced explanations for gender pay differentials including detailed accounts of
how workplace social contexts contribute to the explanations of pay levels: relationships with coworkers and supervisors (Ostroff & Atwater, 2003) and mentors (Ramaswami et al., 2010).

Research in this review period provides additional evidence confirming prior meta-analytic findings (cf., Gupta & Shaw, 1998; Jenkins et al., 1998) that financial incentives are positively related to how much workers produce, but also provides the first compelling evidence that financial incentives relate positively to performance as well (Garbers & Konradt, 2014). Although additional studies are needed to estimate the magnitude of the relationship more precisely, Garbers and Konradt’s (2014) finding that financial incentives have a stronger positive relationship with performance quality than with performance quantity is provocative. It also provides evidence to dispel the myths espoused by popular writers and speakers (Kohn, 1993; Pink, 2009) that somehow financial incentives erode performance quality.

The empirical literature in this time frame shows important boundary conditions of the relationships between pay changes, merit pay, bonuses, performance, and attitudinal-related outcomes. Individual differences in sensitivity to reward and punishment signals (Begley & Lee, 2005; Brosi et al., 2013; Shaw et al., 2003), prior expectations and pay growth (Nyberg, 2010; Schaubroeck et al., 2008), and position in the salary structure (Trevor & Wazeter, 2006) all play important roles in determining how individuals react to financial incentives. Finally, Nyberg et al.‘s (in press) finding of potential substitution effects for different types of financial payments (e.g., bonuses and merit pay) has important theoretical implications and also seems counter to a trend in organizational practice of layering different types of reward systems. Future research on the utility of performance-based pay (e.g., Sturman, Trevor, Boudreau, & Gerhart, 2003) would be well served to consider the value of using several types of incentives concurrently.
Future Research Directions

Threshold effects and “just noticeable differences.” I encourage a revival of a small but important area of financial incentives research: the study of minimum thresholds or “just noticeable differences” in pay increases or pay changes. The evidence concerning the general positive relationship between financial incentives and individual performance is now well established (Gerhart & Rynes, 2003; Gupta & Shaw, 2014), and the literature has moved in several directions. One potentially fruitful path would be to explore further the point at which pay increases convey meaning (behaviorally and attitudinally) for individuals and the point at which positive effects may begin to subside. The positive relationship notwithstanding, individuals are very likely to be most sensitive to pay changes within a certain range; below a certain threshold, changes are essentially undetectable (Gneezy & Rustichini, 2000; Mitra, Gupta, & Jenkins, 1997); above the threshold, changes are decreasingly meaningful. The literature’s scant evidence on these effects suggests a minimum threshold of about 7 percent in between-person tests (Mitra et al., 1997), a finding that seems to have some cross-cultural stability (Mitra et al., 2014). I judge that at the current time we know much more about minimum thresholds for reactions to pay changes than we know about upper boundaries of employee reactions. Studies that purport to test reactions to large rewards tend to include experimental conditions that seem beyond believable ranges. For example, high-performing participants in Ariely, Gneezy, Loewenstein, and Mazar’s (2009) experiment could be awarded half of a yearly salary, which seems beyond a reasonable level for experimental participation. Some very good possibilities still exist for field studies of upper-threshold reactions to pay changes, especially in growing economies like China’s where average pay levels increases are
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much higher than in the United States and Europe in recent years. As a final note on thresholds, the literature tends to focus on behavioral and affective reactions to pay changes, but perspectives such as Thierry’s (1991) reflection theory suggest that individuals learn much information about themselves from organizational pay decisions. Small pay increases may elicit few, if any, behavioral reactions, but “below the threshold” reactions may be observed if the scope is extended to other dimensions of pay meaning (Shaw & Jenkins, 1995).

Pay secrecy. Research on pay secrecy issues enjoyed what seemed to be a long hiatus after founding studies decades ago (e.g., Lawler, 1966). But this research area has been rejuvenated in recent years on the basis of new theory (Colella, Paetzold, Zardkoohi & Wesson, 2007) and empirical testing. Bamberger and Belogolovsky (2010) argued that perceptions of justice as well as instrumentality perceptions would mediate the relationship between pay policy (open versus secret). But their experiment did not uncover a direct or mediated relationship. They argued further that the relationship would be uncovered by accounting for individuals’ tolerance for inequity. They found support for the moderated-mediation model. Instrumentality perceptions mediated a positive (negative) relationship between pay policy and individual performance among those with high (low) tolerance for inequity. Their findings show the highest performance levels among those with low tolerance for inequity in open pay systems and among those highly tolerant for inequity in secret pay systems. In a follow-up study, Belogolovsky and Bamberger (in press) found that pay policy (open versus secret) was negatively related to performance in general, but the negative relationship was stronger when relative rather than objective performance evaluations were used. Their results also suggest that pay secrecy policies have sorting effects such that secret pay conditions and lower pay-for-
performance perceptions increase turnover intentions, especially when performance evaluation criteria are based on relative, rather than objective, standards.

Holzen and Gupta (2014) extended those empirical findings in a recent conceptual paper designed to map the domain of pay secrecy and openness. They developed a pay secrecy matrix by juxtaposing two continua of information about people (distributive) and processes (procedural). The intersection of policies about the distributions of pay and the degree of procedural information that is shared with employees creates a 3X3 matrix of pay secrecy types and should allow for more specific predictions and tests than are possible with single-continuum approaches. Another advantage is that it creates a window of opportunity for linkages with literature on pay-system communication appearing in a parallel plane in the literature. Pay communication policies (at the organizational level; viz., Shaw & Gupta, 2007) and pay-system knowledge (at the individual level; e.g., Fulmer & Chen, 2014) have some overlap with the procedural information dimension in Holzen and Gupta’s (2014) model. Individuals typically have positive affective reactions to procedural knowledge about the pay system (Fulmer & Chen, 2014; Moisio & Vartiainen, 2011; Shaw & Jenkins, 1995), and communication policies play a significant role in differential turnover patterns for good and poor performers (Shaw, Dineen, Vellella, & Fang, 2009; Shaw & Gupta, 2007). Future investigators are strongly encouraged to test and extend this new conceptual perspective on pay secrecy.

Financial incentives and the behaviors of others. Pohler and Schmidt (2014) offered a new perspective on the use of financial incentives for managers and the trickle-down effects on behavior. They offered three different theoretical positions on the relationship between
managerial bonuses and turnover patterns among subordinates. From an agency theory view, they argued that bonus-receiving managers would pay more attention to selection and set higher expectation levels for subordinates. Bonus provision and subordinate turnover was predicted to have a stronger relationship when the workforce had low overall performance. From an equity theory view, Pohler and Schmidt (2014) reasoned that managerial bonuses and subordinate turnover relationships would be stronger when lower-level employees were ineligible for bonuses. From a strain perspective, the authors argued that the two variables would be more strongly associated when managers were not evaluated on their treatment of subordinates. In a two-wave sample of Canadian organizations, the authors found a stable positive relationship between managerial bonuses and quit rates of lower-level employees. They found further support for the strain-based theory; managerial bonuses were most strongly related to quit rates when managers were not evaluated on their treatment of employees. Supplemental analyses showed that employees mentioned compensation issues and disagreements with management as reasons for quitting more frequently when managers received bonuses.

Although Pohler and Schmidt (2014) conducted their study at the establishment level, it provides an interesting example in an area that has yet to be explored thoroughly, namely how incentives provided to one individual impact the attitudes and behaviors of others. Social psychological research has demonstrated further that reminders of money can increase self-sufficiency, decrease altruistic and generous behavior, and even create more physical distance between individuals (Vohs, Meade, & Goode, 2006; 2008). It is reasonable to anticipate that offering financial incentives to individuals will alter their behavior in ways that impact others.
Future research that explores trickle-down incentive effects from supervisors to subordinates and the implications of other reactions to financial incentives on the attitudes and behaviors of others would be a major step forward.

*Cross-cultural* differences. Finally, although the studies reviewed here were conducted in locations around the world, the individual-level literature on the antecedents and consequences of pay changes lacks systematic tests of cross-cultural differences in the antecedents and consequences of pay levels and pay changes. Sweeney and McFarlin (2004) conducted surveys aimed at elucidating how individuals in different cultures made social comparisons with others in the country, with others with similar educational background, and with others in similar jobs. Although some differences emerged, specifically with employees in certain Eastern bloc countries, the patterns seemed more suggestive than definitive. A few other studies have examined whether reward preferences differ across countries (for exceptions, see Chiang & Birtch, 2007; Chiang & Birtch, 2012) and within countries across different organizational cultures such as state-owned versus private enterprises in China (He et al., 2004; see also, Werner & Ones, 2000). Some differences emerged in these studies, but as Chiang and Birtch (2007) noted, cultural differences “may be diminishing or giving way to a range of other contextual forces” (p. 1293). Studies are needed to undertake explicit cross-cultural replications of established findings, such as Mitra et al.’s (2014) test of pay raise threshold in Finland, or to compare underlying perspectives in concurrent tests across several countries or cultures.
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