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Conversational humor and job satisfaction at work: exploring the role of humor production, appreciation, and positive affect

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Abstract: This study examined whether everyday conversational humor is related to job satisfaction, and if the relationship is mediated by positive affect. We also explored differences between the roles of humor production and humor appreciation, and tested the cyclical nature of the relationship by examining whether job satisfaction stimulates subsequent humor. Data were obtained through an experience sampling study in which participants completed two brief surveys each day for 10 consecutive workdays (Level 1 n = 237–279, Level 2 N = 35). Results revealed a positive relationship between humor and job satisfaction that was partially mediated by positive affect, and also indicated that job satisfaction on day *t* predicted humor production the morning of day *t + 1*. This study contributes to the literature by examining the previously theorized but untested hypothesis that humor's effects stem from their impact on affect, and also by exploring the distinction between humor production and appreciation.

Keywords: humor, affect, job satisfaction, experience sampling

1 Introduction

Humor is routinely woven into the fabric of organizational life, and is particularly ubiquitous in conversations between co-workers (Dwyer 1991; Holmes and Marra 2002). "Conversational humor" takes place within the flow of everyday social interactions at work, and can include a broad array of humor forms such as word play, irony, anecdotes, innuendo, sarcasm, hyperbole, punning, allusion, and mocking (Norrick 2003). It is the most frequent type of humor experienced in peoples' everyday work lives, far outpacing other forms of humor such as canned jokes (Martin and Kuiper 1999). But to what extent does conversational humor actually influence peoples' experiences at work? Is humor just a

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pleasant but unimportant distraction from everyday work life, or can it play an important role in shaping people's work-related attitudes and behaviors? Certainly people *believe* the latter. A substantial majority of people think a sense of humor is a key leadership trait for employee retention and job performance, and is essential for career advancement (Wilkie 2013). Similarly, organizational theorists tout humor as a valuable management tool (Malone 1980), presumed to facilitate communication (Lynch 2002), support positive affect and relationship building (Cooper 2008), minimize status differentials (Vinton 1989), and build cohesiveness (Duncan 1984).

Surprisingly, though, despite the broad popular acceptance of humor's positive effects, we know little about *how* humor impacts organizations (Pundt and Venz 2016; Robert and Yan 2007). Because humor is a familiar and generally pleasant aspect of day-to-day life, organizational scholars who are not familiar with the limited literature on humor in organizations might assume the theoretical mechanisms underlying humor's effects are already well-understood (Martin 2007). Indeed, the correlations observed in this small literature between the sense of humor and important outcomes such as job satisfaction, cohesiveness, and work withdrawal (Mesmer-Magnus et al. 2012) tend to reinforce the notion that we already know what we need to know about whether, how, or when humor works in organizational contexts.

However, our understanding of humor in organizations is limited by the fact that studies have seldom examined theoretical explanations for how humor works. Most notably, theoretical frameworks highlighting the role of affect have been developed, but not tested. In particular, an important component of Cooper's (2008) relational process model suggests that humor's effects on relationships are driven by processes that are directly or indirectly linked to affect in dyadic interactions, and that positive outcomes flow from the positive relationships. Similarly, Robert and Wilbanks' (2012) wheel model of humor suggests that humor might be part of a cyclical process involving affect. They proposed that humor drives positive affect, which drives positive outcomes such as a positive workplace climate and job attitudes, which in turn create a climate that is more conducive to additional humor. A demonstration of support for the important role of affect as described in these theories could also inform practice and pave the way for the integration of humor into the study of other more well-understood and widely examined phenomena linked to affect (c.f., Elfenbein 2007).

Furthermore, the distinction between the roles of humor production (i.e., the creation and/or initiation of a humorous comment, joke, or action) and humor appreciation (i.e., reactions to humorous stimuli) have not been examined empirically with regard to differences in relationships with other workplace

variables. Who drives humor's effects: the person who tells a joke, or the person who responds to it? Although Robert and Wilbanks (2012) speculated that the producer and appreciator roles might be highly intertwined and difficult to discriminate, another possibility is that humor production and appreciation involve unique behaviors, antecedents, and consequences. If so, understanding the distinction between humor production and appreciation is a fundamental issue for understanding and harnessing humor's effects.

This study examines the relationship between conversational humor behavior and job satisfaction as an important individual-level workplace outcome. We use a longitudinal experience-sampling study to examine the role of positive affect as a possible mediator in the process by which humor impacts job satisfaction, and we explore humor's role as part of a cyclical process by examining whether job satisfaction predicts subsequent humor behavior. In addition, we examine the fundamental distinction between humor production and appreciation as the two basic roles in conversational humor. In doing so, this study is the first to explore the possibility that this distinction might be theoretically important to researchers' understanding of humor and its impact in organizational contexts.

2 Conversational humor and job satisfaction

Multiple explanations for why humor might be beneficial in the workplace have been proposed in the popular, practitioner, and academic literatures. Humor is thought to help people cope with work-related stress (Abel 2002), enhance work-group cohesiveness (Duncan 1984; Vinton 1989), and decrease conflict by serving as a social lubricant (Morreall 1991). These explanations for humor's positive impact have clear implications for job satisfaction, both in terms of the relational and task-related aspects of the job: humor might make both the task and the people with whom one works more enjoyable. As such, in the current study we examine job satisfaction as a job attitude that is impacted by humor, and which has important implications for workplace behaviors such as work withdrawal, turnover and job performance (Judge et al. 2001; Roznowski and Hulin 1992).

A small body of empirical evidence, as summarized in a recent meta-analysis (Mesmer-Magnus et al. 2012), indicates that the sense of humor is positively correlated with job satisfaction. The term "sense of humor" is generally defined as a personality characteristic reflecting habitual tendencies to initiate or respond to humor (Ruch 1998). Proposed relationships between the sense of humor and job satisfaction assume that individual differences in humor tendencies are manifest in actual workplace behavior. Indeed, a review of the

studies included in the Mesmer-Magnus et al. (2012) meta-analysis indicates that relationships between humor and outcomes examined in their analysis, such as between humor and job satisfaction, focused on general perceptions of the sense of humor rather than specific humor behavior and an outcome. As a typical example, Decker (1987) found a positive correlation between workers' ratings of job satisfaction and their ratings of their supervisor's sense of humor. Although suggestive, such designs raise the possibility that because people *believe* a sense of humor is a positive characteristic (Martin 2007), there is a strong impulse to respond to survey measures of sense of humor and other positive workplace variables in an effort to be consistent, or to confirm implicit hypotheses that good things go together.

Because the notion of the "sense of humor" is open to various interpretations, we thought it would be important to present respondents with specific instances of humor behavior rather than the more general construct of sense of humor in order to mitigate problems associated with biased recall. In addition, it is important to specify the types of humor behavior to be examined. Because conversational humor appears to be the most common form of humor behavior (Martin and Kuiper 1999; Norrick 2003), and involves day-to-day humor experienced in ongoing interactions, we have chosen to examine the relationship between conversational humor and job satisfaction. Given the multitude of presumed functions of humor in the workplace that should influence attitudes toward one's job (e.g., building cohesiveness, reducing conflict, coping with stress), we expect that conversational humor will be positively associated with job satisfaction.

Hypothesis 1: Conversational humor will be positively associated with job satisfaction

3 Affect as a mediating mechanism

A number of recent theoretical frameworks implicate positive affect as a mediator of the relationship between conversational humor behavior and job satisfaction. Cooper's (2008) *relational process model* focuses specifically on humor used in dyadic interpersonal contexts. It suggests that humor and its impact on affect play a direct or indirect role in four relational processes that link humor to relationship quality; affect-reinforcement, similarity-attraction, self-disclosure, and hierarchy salience. Although she indicates that each relational process is "conceptually distinct," she suggests that "they all link to affect in some way" (p. 1100). In this regard, Cooper's model clearly casts affect as an important mediating mechanism that drives humor's effects in relational contexts.

Affect is also central in Robert and Wilbanks' (2012) *wheel model of humor*. Adapting Weiss and Cropanzano's (1996) notion of 'affective events,' the wheel model proposes that humor is a positive affective event, and that positive affect drives subsequent behaviors and job attitudes. Like Cooper's (2008) model, the wheel model suggests that humor-induced positive affect drives outcomes such a positive perceptions of relationships (e.g., cohesiveness) as well as positive work behaviors and job satisfaction. This assertion is also consistent with research on interpersonal affect regulation (Niven et al. 2012a; Niven et al. 2012b), which finds that people engage in various interpersonal behaviors (including humor) in order to regulate others' emotions.

In combination, these theories strongly suggest that conversational humor occurring during work can influence organizationally-relevant outcomes through the mediating influence of positive affect. However, to the best of our knowledge, this hypothesized process has not been demonstrated empirically. Support for affect-based explanations for humor's effects can provide useful guidance regarding how humor's positive effects might best be harnessed, and could help stimulate further research by linking humor to a much broader set of phenomena related to affect (e.g., creativity, decision making; Elfenbein 2007).

Hypothesis 2: The relationship between conversational humor and job satisfaction will be mediated by positive affect.

4 Humor production vs. appreciation

A fundamental distinction between humor production and appreciation has often been made in the broader humor literature (Martin 2007; Ruch 1998; Ziv 1981). Humor production or "creation" refers to the ability to generate humor. Humor appreciation refers to the tendencies to find things funny in general, or to find certain types of humor to be amusing. Behaviorally, production and appreciation are viewed as the two primary social roles in humor communication (Lynch 2002). In conversational humor, producers initiate humor in the form of funny comments, jokes, or quips, while appreciators experience a cognitive, emotional, and/or behavioral response to the humor (Warren and McGraw 2014).

In this study we explicitly make the distinction between humor production and appreciation in order to explore the potentially unique roles that each might play in driving humor's outcomes. However, the literature offers relatively little empirical or theoretical guidance that can be used to formulate specific hypotheses. One exception is Robert and Wilbanks (2012), who address the issue in the development of their *wheel model of humor*. On one hand, they suggest that

humor appreciation is important because the affect elicited from humor appreciation is what initiates the cyclical processes involving affect and outcomes that set the stage for additional humor. They argue that, in practice, people frequently take on both roles during periods involving back-and-forth "joking sequences" (Fine 1977), or episodes in which parties engage in bursts of joking, responses (e.g., laughter, smiles; Ziv 1981), and additional humor. This suggests that within a limited time period, humor production and appreciation might often co-occur, and that the lines between creation and appreciation might be blurred.

However, Robert and Wilbanks (2012) also argue that humor production is a necessary condition for generating positive affect, because without humor production, there will be no humor behaviors to appreciate, and thus no positive affect. In addition, they write "past experiences with shared humor and perhaps laughter and other demonstrations of positive affect also increase the likelihood that an individual will produce humor, because people learn that humor will be appreciated and will result in rewarding responses from others" (pp. 1078–1079). Similarly, research by Niven et al. (2012b) indicates that not only do affect regulation strategies such as joking influence others' affect, the positive affect that such strategies generate in others might reflect back to the *sender* via affective contagion processes. This suggests that humor producers might experience positive affect from their humor because seeing others respond positively to their humor makes humor producers feel good. In other words, humor production not only initiates affect in others, it might boost positive affect in the humor producer through vicarious experience of others' responses and moods.

Wegener and Petty's (1994) hedonic contingency view provides a useful framework for conceptualizing potentially independent effects of humor production and appreciation. The hedonic contingency view suggests that people in a positive mood are motivated to stay in a positive mood, and that they will choose behaviors that will help them maintain a positive mood. Unlike people in a negative mood, for whom almost any behavior is likely to improve or at least maintain their mood, people in a positive mood have to be very selective about the behaviors they choose in order to maintain positive mood (Wegener and Petty 1994). We propose that humor production might represent an example of a behavior that people can choose to try to maintain their positive mood. Specifically, it is a behavior that people intentionally choose to exhibit (unlike appreciation which requires that others initiate the humor), and which people learn to associate with their own and others' positive moods and positive mood contagion (Robert and Wilbanks 2012). In the context of the current study, because job satisfaction judgements are strongly influenced by affective

reactions to events and various components of one's job, and because job satisfaction is an affectively laden attitude (Weiss et al. 1999), we predict that people who report high levels of state job satisfaction during one period (e.g., the end of day *t*) will be more likely to produce humor in the subsequent period (the beginning of day $t + 1$) in order to help maintain the positive feelings associated with job satisfaction.

Hypothesis 3: Job satisfaction at the end of the day will predict humor production (but not appreciation) the following morning.

5 Method

5.1 Overview of procedure

We conducted an experience sampling study in which participants were asked to complete two brief surveys each day for 10 consecutive workdays. At least one week prior to their primary two-week data collection period, participants were administered a questionnaire measuring their age, years of experience with their current employer, and years in their current position. During the 10 work-day data collection period, participants received e-mails at the end of the morning (11:00am), and in the afternoon (3:00pm), with a link to an online questionnaire. The morning questionnaire first measured participants' *current* positive affect (i.e., which we term "morning affect"), followed by their exposure to conversational humor *in the morning*. The afternoon questionnaire first measured *current* positive affect (i.e., "afternoon affect"), followed by exposure to humor *in the afternoon*, and finally their job satisfaction. As is customary when using methodologies in which participants respond to the same measures many times over a number of days, the measures we employed were kept brief to increase participation rates (Miner and Glomb 2010). Short surveys are less problematic with regard to reliability in experience sampling methodologies than they are in single-administration questionnaire designs, because the reliability of even single items can be established by aggregating items over time (Scollon et al. 2003). Participants completed an average of 7.5 (out of 10) morning surveys and an average of 6.7 afternoon surveys.

5.2 Sample

The non-academic staff of an academic unit at a large Midwestern university was recruited to participate in this study. Although specific job titles varied (e.g.,

secretarial staff, academic advisors, technology services), participants were all on a similar hierarchical level, and had no supervisory responsibilities. Of the 58 eligible participants, 35 (60 %) agreed to participate. Though the number of participants is small relative to traditional survey research using a cross-sectional design, it is consistent with other research using experience sampling methods (e.g., Miner et al. 2005, who had 41 participants), and the number of observations ranged from 237 to 279. Respondents were 66 % female, 37 % were between 30 and 39 years old, and 29 % were between 20 and 29. Respondents had been working for the university an average of 8.4 years, and in their current position for 4.7 years.

5.3 Measures

5.3.1 Conversational humor production and appreciation

We developed a 4-item humor inventory to measure conversational humor, which was composed of two production and two appreciation items. Participants responded to the items during the late-morning and end-of-day questionnaire administrations for each of the 10 days. They were instructed to indicate "*Over the last few hours*, the degree to which you experienced humor in each of the following situations" using a 5-point scale ranging from 1 = *this did not happen at all* to 5 = *this happened to a great extent*. Items for humor production were "I told someone at work a joke or funny story that was not related to work," and "While interacting with co-workers about work-related topics, I made humorous comments or observations." The humor appreciation items paralleled those items; "Someone at work told me a joke or funny story that was not related to work," and "While interacting with co-workers about work-related topics, a co-worker made humorous comments or observations." The mean coefficient alpha (across days) for the conversational humor production items was 0.73 in the morning and 0.74 in the afternoon, and for the conversational humor appreciation items it was 0.66 in the morning and 0.80 in the afternoon.

5.3.2 Daily positive affect

The morning and afternoon questionnaires assessed positive affect with 4 items used by Dalal et al. (2009). Items included excited, delighted, concentrating, and alert (i.e., two high and two low activation items). Participants were instructed to "rate the extent to which you are feeling this way *At this moment*" using a

5-point scale. The mean coefficient alpha (across days) was 0.65 in the morning and 0.64 in the afternoon.

5.3.3 Daily job satisfaction

Job satisfaction was measured with two items "(In the last few hours) I have felt satisfied with my job," and "I have felt satisfied with the persons in my work group." Participants were asked to "rate the extent to which you agree with the item" using a 7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*. The mean coefficient alpha (across days) was 0.83.

6 Analyses

After centering conversational humor and positive affect around the individual's mean (group-mean centering), we tested each hypothesis using hierarchical linear modeling (HLM 6.0; Raudenbush et al. 2004). This allowed us to specifically examine the within-subject influence of conversational humor on job satisfaction, through positive affect (Singer and Willett 2003), because centering level 1 variables controls for between-subjects variance in means. To justify analysis using HLM we confirmed that a sufficient proportion of the total variance was within-subjects variance (Raudenbush and Bryk 2002). Consistent with this requirement, within-subjects variance was 52% of total variance for both morning and afternoon positive affect, 49% for conversational humor, and 44% for job satisfaction.

7 Results

The means, standard deviations, and correlations between study variables are presented in Table 1. The HLM results pertaining to tests for hypotheses 1 and 2 are presented in Table 2, and in Table 3 for hypothesis 3. All reported significant effects are based on two-tailed tests. Figure 1 depicts our significant results.

7.1 Conversational humor and job satisfaction

Hypothesis 1 predicted that conversational humor would be related to job satisfaction. To examine this hypothesis, we used a combined measure of

Table 1: Means, standard deviations, and intercorrelations.

Variables	Mean	SD	1	2	3	4	5	6	7	8
1.Daily Job Satisfaction	5.02	1.33	–							
2.Conversational Humor (morning)	1.99	1.12	−0.01	–						
3.Conversational Humor Production (morning)	1.96	1.16	−0.01	0.88*	–					
4.Conversational Humor Appreciation (morning)	2.01	1.17	−0.01	0.95*	0.91*	–				
5.Positive affect (morning)	4.80	1.10	0.10	0.22*	0.26*	0.21*	–			
6.Conversational Humor (afternoon)	1.93	1.11	0.16*	0.14	0.14	0.14	0.00	–		
7.Conversational Humor Production (afternoon)	1.89	1.13	0.13*	0.13	0.14	0.12	0.06	0.88*	–	
8.Conversational Humor Appreciation (afternoon)	1.97	1.19	0.14*	0.12	0.10	0.13	−.06	0.86*	0.72*	–
9. Positive affect (afternoon)	4.59	1.18	0.17*	0.10	0.13	0.06	0.30*	0.31*	0.40*	0.18

Note: Level 1 $n = 237–279$; Level 2 $n = 35$. SD = standard deviation.
*$p < 0.05$ (two-tailed).

Table 2: Hierarchical linear modeling coefficients (unstandardized) predicting job satisfaction.

Variables							Job Satisfaction	
Within Individual Effects (Level 1)	**β**	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**
Intercept	4.95*	0.21	4.89*	0.21	4.86*	0.22	4.87*	0.22
Morning Independent Variable								
Conversational Humor (morning)			−0.01	0.05				
Morning Mediator Variable								
Positive Affect (morning)	−0.03	0.06						
Afternoon Independent Variable								
Conversational Humor (afternoon)					0.16*	0.05	0.11*	0.04
Afternoon Mediator Variable								
Positive Affect (afternoon)	0.16*	0.05					0.16*	0.05

Note: SE = robust standard errors.
*$p < 0.05$ (two-tailed).

Table 3: Hierarchical Linear Modeling Coefficients (Unstandardized) Predicting Next Morning Humor Production.

Variables	Dependent Variables (morning of day t + 1)							
	Humor Production				Humor Appreciation			
Within Individual Effects (Level 1)	β	SE	β	SE	β	SE	β	SE
Intercept	1.94*	0.12	1.94*	0.12	2.05*	0.14	2.05*	0.14
Job Satisfaction (day t)	0.27*	0.10	0.27*	0.10	0.16	0.10	0.15	0.09
Humor Production (day t)			0.15	0.11				
Humor Appreciation (day t)							0.11	0.12

Note: SE = robust standard errors.
*$p <$ 0.05 (two-tailed).

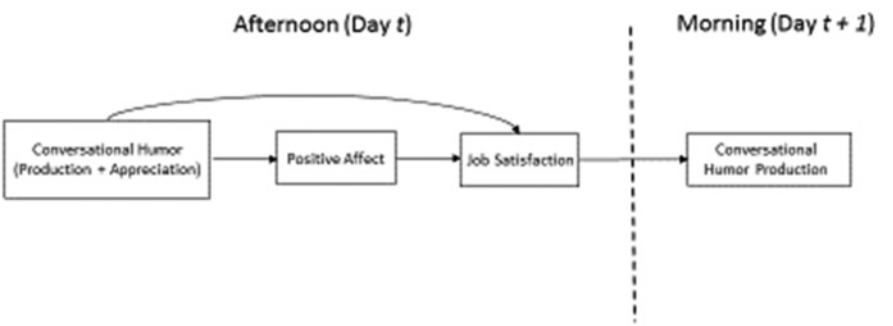

Figure 1: Summary of Findings

conversational humor that aggregated across production and appreciation items. First, we examined the relationship between morning conversational humor and job satisfaction as rated in the afternoon, which was not significant. We then examined the relationship between afternoon conversational humor and job satisfaction, and found a positive relationship ($\beta = 0.16$, $p < 0.05$). As such, hypothesis 1 was supported, but only for the afternoon conversational humor measure that was obtained concurrently with the measure of daily job satisfaction.

Hypothesis 2 predicted that positive affect would mediate the relationship between conversational humor and job satisfaction. Because morning conversational humor was not related to job satisfaction, we tested hypothesis 2 by examining the mediated relationship between afternoon conversational humor

and job satisfaction, through afternoon positive affect. We followed Preacher and Hayes' (2008) recommended practice of examining bootstrap confidence intervals for indirect effects. We first examined the relationship between our independent variable (i.e., humor) and the mediator variable (i.e., positive affect), and found that afternoon conversational humor was positively related to afternoon positive affect ($\beta = 0.21$, $p < 0.05$). We then examined whether the mediator variable was related to the dependent variable (i.e., job satisfaction), and found that afternoon positive affect was positively related to job satisfaction ($\beta = 0.30$, $p < 0.05$). Finally, to examine the mediation proposed in hypothesis 2, we examined the indirect relationship between afternoon conversational humor and job satisfaction through afternoon positive affect. The corresponding confidence interval did not include zero (95% CI was 0.001 to 0.125), indicating a significant indirect effect, and supporting the hypothesis that afternoon positive affect mediated the relationship between afternoon conversational humor and job satisfaction. Although the coefficient for afternoon humor was reduced when afternoon positive affect was added to the model, it was still significant. Therefore, hypothesis 2 was supported for partial mediation with the afternoon measure of conversational humor. Findings from testing hypotheses 1 and 2 are depicted on the left side of Figure 1.

7.2 Humor production and appreciation

To explore whether our results replicated for humor production and humor appreciation separately, we re-analyzed hypotheses 1 and 2 using the sub-sets of items for production and appreciation (i.e., 2 items each). We first examined hypothesis 1 for morning humor production and appreciation, and found that neither was related to job satisfaction. However, both afternoon humor production and appreciation were positively related to job satisfaction (respectively $\beta = 0.16$ and $\beta = 0.13$, $p < 0.05$).

We then examined the mediation hypothesis for both afternoon humor production and appreciation. Results indicated that afternoon humor production had a positive indirect effect on job satisfaction through afternoon positive affect (95% CI was 0.014 to 0.148). However, for humor appreciation, the confidence interval for the indirect effect included zero (−0.011 to 0.103).

7.3 Job satisfaction predicting next day humor production

Hypothesis 3 predicted that job satisfaction at the end of the day would predict humor production the morning of the following day. This hypothesis was

supported (see Table 3 and the depiction of this result on the right side of Figure 1). Job satisfaction (on day *t*) was positively related to humor production the morning of day $t+1$ ($\beta = 0.27$, $p < 0.05$), even after controlling for humor production on day *t*. The results for a parallel analysis predicting humor appreciation on day *t + 1* indicated that job satisfaction did not predict humor appreciation the following day.

8 Discussion

Conversational humor is a common and versatile human behavior that is interwoven into daily social interactions in organizations (Martin and Kuiper 1999). However, we know surprisingly little about *how* humor impacts everyday work life. With rare exceptions, the small body of empirical research on the topic has focused on trait sense of humor rather than humor behavior, and has failed to examine humor within a theoretical framework that can help us understand why or how humor works (see Pundt and Herrmann 2014, for an exception within the realm of leader humor). Our goal in conducting this study was to investigate whether and how *everyday conversational humor*, including both production and appreciation, influences important organizational outcomes, such as job satisfaction, and how such outcomes influence subsequent humor production as part of a cyclical process (Robert and Wilbanks 2012).

Our results provided support for all three of our hypotheses. Conversational humor was associated with job satisfaction, and this relationship was partially mediated by positive affect. Past studies linking humor to outcomes focused almost exclusively on trait sense of humor, and our results provide a demonstration of a relationship between humor behavior and job satisfaction. This is an important distinction given the pervasive belief that the sense of humor is a positive characteristic, and the likely tendency to assume that it is correlated with other positive things. In addition, our demonstration of partial mediation of the humor-job satisfaction relationship by positive affect is the first empirical confirmation of recent models of humor in the workplace that feature affect as mediator or key explanatory mechanism (i.e., Cooper 2008; Robert and Wilbanks 2012). This result also underscores the idea that humor phenomena might be meaningfully integrated into the many theoretical frameworks involving affective mechanisms, which have linked affect to an extensive range of important phenomena in organizations and otherwise (e.g., Elfenbein 2007; Lyubomirsky et al. 2005).

However, the fact that our results only indicated partial mediation suggests that there are also other processes by which humor might impact individual-

level outcomes such as job satisfaction. A number of possible alternatives to an affective mechanism exist. For example, humor might provide an important break or distraction from work tasks. Such a process has been hypothesized for other types of breaks using regulatory resource theory, which suggests that breaks might replenish energetic resources available for subsequent behavior, independent of affect (Trougakos et al. 2008). Individuals who feel more invigorated in their jobs are likely to have better attitudes toward various components of their job, such as the tasks themselves, or their coworkers. Humor might also impact job satisfaction through improved cognitive evaluations of various features of the workplace. For example, humor might enable individuals to reconceptualize workplace stressors, such that people or events that would have otherwise been perceived negatively might not seem so bad. Humor's ability to impact cognitive evaluations of stressors has often been perceived as an important function of humor that is not linked to humor's ability to generate positive affect (Booth-Butterfield & Wanzer, 2017).

We also examined the possibility that the role people take in conversational humor at work, as producer or appreciator, might result in differential relationships with work outcomes. Results indicated that humor production and appreciation were correlated (within-subjects $r = 0.91$ and $r = 0.72$ in the morning and afternoon, respectively), consistent with Robert and Wilbanks' (2012) suggestion that people might often take on both roles within humor episodes that involve multiple instances of humor and responses. Also, although positive affect was only a significant mediator for the relationship between humor production and job satisfaction (i.e., it narrowly did not reach significance for appreciation), overall, analyses indicated that both production and appreciation predicted job satisfaction in similar ways.

Perhaps one of the most interesting findings featuring the production-appreciation distinction was that job satisfaction measured at the end of day t was positively related to humor production (though not appreciation) on the morning of day $t+1$. When people left work feeling positively about their job, they were more likely to report that they produced humor when they came in the following morning. Notably, this result was obtained across a time-lag rather than cross-sectionally, which reduces concerns about common method variance (Podsakoff et al. 2012), and strengthens our ability to imply causality. This finding is consistent with the hedonic contingency view (Wegener and Petty 1994), which suggests that people experiencing positive affect will tend to choose behaviors that they have learned will allow them to stay in a positive mood. Thus, people who leave work feeling satisfied with their job may be more likely to produce humor the following morning when they return to work in order to keep that good feeling going. One possible alternative explanation to

the hedonic contingency view is that people who are experiencing positive mood at the end of day *t* might be experiencing high levels of reinforcement for humor production, which subsequently spills over into the next morning's humor production behavior. However, the fact that the relationship between job satisfaction on day t and humor production in the morning of day $t + 1$ controlled for humor production on day *t* makes this explanation less likely. We believe this finding is particularly noteworthy, because it suggests that people are more likely to produce humor as a means of positive mood propagation, rather than as a means of mood repair (i.e., producing more humor the morning following particularly low job satisfaction).

This finding also supports Robert and Wilbanks' (2012) assertion that humor production might play a central role in perpetuating the cycle of humor, affect, and outcomes that drive additional humor. Support for a cyclical theoretical process involving humor (e.g., the wheel model; Robert and Wilbanks 2012) might help to explain that while the effects of individual incidences of humor might be small, and difficult to detect, the cumulative effect of humor might be substantial. In any given minute, hour, or day, humor's effects might be so inconsequential as to be nearly invisible to individuals who produce and experience it within the flow of everyday work life. However, its pervasive presence in interpersonal interactions suggests that its cumulative effect might be quite real and impactful.

9 Strengths and limitations

Existing empirical research examining humor at work has focused primarily on the *sense of humor* and workplace outcomes (see Mesmer-Magnus et al. 2012). In such studies, participants are typically asked to recall their general tendencies to use humor over an abstract period of time, or that of their leaders and coworkers. It is not at all clear if participants' memories for past humor are accurate (Craik and Ware 1998). In addition, given the strong possibility that people will be inclined to respond in a manner that is consistent with the belief that a sense of humor is good, and should be associated with other "good" things (Martin 2007), it is hard to be confident that correlations between the sense of humor and workplace outcomes found in previous studies are valid, rather than a product of desirability biases, or halo error (e.g., my leader is good, so she must have a good sense of humor). In the current study, we sought to address this limitation by focusing on specific humor *behavior* rather than the sense of humor, and attempted to assess those behaviors close in time to when they

occurred (i.e., every 3–4 hours), rather than relying on participants to recall humor behavior weeks, months, or years after the fact. In addition, we used an experience-sampling design that allowed us to examine time-lagged within-person relationships, which gave us somewhat stronger confidence in the direction of causality for our finding that day *t* job satisfaction predicted humor production on day *t + 1*.

We also note a number of limitations to our study. First, the number of participants in our study was small (i.e., N = 35). However, the data collection process with each participant was intensive, and the repeated observations of individuals over 10 days resulted in a total set of observations (i.e., N = 237–279) that was more substantial, and in the ballpark of previous studies that have employed experience sampling approaches. Second, our sample was drawn from one location and from one type of organization. Although our sample included participants from a fairly broad range of job types (e.g., academic advisors, support and secretarial staff) our results do not necessarily generalize to other types of workplaces. Future research should explore job types with unique work environments such as high pressure sales teams, where humor might play a very different role and have potentially positive and negative outcomes. Finally, our methodology did not ask participants to differentiate between humor experienced in different interpersonal contexts. For example, we did not examine the potential implications of humor in manager-employee vs. co-worker relationships. Future research could build on work by Cooper (2008) to examine how different social contexts might influence humor and its effects.

We also note some strengths and limitations of our approach to measuring humor events. Because we were not aware of any existing measures designed to capture peoples' humor behavior, we felt it was important to develop a measure for this study. We kept the measure short and abstract enough to allow individuals to classify events as humorous based on their own standards. We also chose to create items that explicitly allowed participants to report both use of humor that was related to work and humor that was used at work but not work-related. In addition, we needed to make a decision about how frequently we would administer the measure. On one hand, frequent administrations of even a brief survey (e.g., every few minutes) would be impractical and would likely lead to low participation rates. In addition, Robert and Wilbanks (2012) suggested that until humor starts to accumulate, researchers might not be able to achieve effect sizes that are detectable and meaningful, because the impact of individual incidences of humor on affect and other outcomes might be small and relatively short-lived. On the other hand, administrations with too much time in between could be problematic because it would be unclear whether people could

accurately remember humor events over that long a time period (e.g., a week). Therefore, we chose the 3–4 hour time period as a happy medium. We believed that this time period would be logistically reasonable, and would permit sufficient time for humor events to build to a point where they could have a meaningful and measurable impact on individuals' outcomes such as job satisfaction.

This measurement approach represents a useful first step and an important set of considerations for future researchers who wish to assess humor behavior. However, our approach had limitations. In particular, we note that although hypothesis 3 was supported using variables measured at different time points (i.e., satisfaction on day *t*, and humor production the morning of day *t + 1*), we only found support for hypotheses 1 and 2 when conversational humor behavior, positive affect, and job satisfaction were measured concurrently. That is, humor was only related to affect and job satisfaction when participants were asked (concurrently) about the humor that occurred in the immediately preceding 3–4 hour afternoon period and their current positive affect and current job satisfaction. This raises the possibility that our results were impacted by common method bias, such that the relationships observed might have been obtained only because all variables were collected at a single point in time and using a common methodology (i.e., a survey). Relatedly, although we carefully developed a theoretical rationale for the direction of the hypothesized relationships, the fact that our results regarding the humor—job satisfaction relationship were only obtained with concurrent measures indicates that we cannot rule out alternative causal explanations.

It is also possible that humor's impact on positive affect is fairly fleeting, and thus lagged relationships (i.e., humor in the morning predicting affect and job satisfaction measured in the afternoon) were not significant. Notably, even the relationship between morning affect and afternoon job satisfaction was not significant in our sample. The affect—job satisfaction relationship is fairly robust in the literature, so the lack of an obtained relationship in our sample between morning affect and afternoon job satisfaction indicates that for this sample of participants, perhaps affective experiences and humor events need to happen fairly closely in time with an assessment of job satisfaction in order to be detectable.

Furthermore, although we thought the basic morning-afternoon structure of our data collection strategy was a reasonable starting point, we do not know what the optimal time frames are for collecting responses about cumulative humor exposure and outcomes. For example, perhaps measuring humor and outcomes every hour would have been sufficient to allow humor events to cumulate, and that the humor could still be close enough in time to the outcomes to be remembered by participants such that an effect over a time lag

could be captured. Future research should explore the possibility of examining humor, affect, and outcomes in shorter intervals.

10 Implications and future directions

The finding that conversational humor was related to job satisfaction lends credence to the general contention that managers should allow and/or encourage humor in the workplace (e.g., Malone 1980). This could be supported by managerial actions such as selection of individuals who demonstrate the ability to produce and/or appreciate humor, reinforcing conversational humor behavior, and perhaps modeling the type of humor managers wish others to engage in.

However, it is important to note that research on humor in workplace contexts is really in its early stages of development. We hope that the current study and results help stimulate future research efforts in this area. One important methodological direction will be to explore the use of additional sources of data (e.g., friend/co-worker reports of humor use). Using additional sources of data could strengthen our confidence in the validity of the relationships between humor, process variables, and outcomes, such as those observed in this study. For example, alternative data sources would potentially mitigate the impact of participants' response-response biases caused by the order in which variables are measured (e.g., measuring humor behaviors first, followed by affect, might influence participants' responses to the affect measure toward consistency—or vice versa). In addition, observational research in which incidents of humor and outcomes such as physiological responses to humor that can be independently coded might be particularly fruitful avenues for future study. Such designs could eliminate the potentially strong demand characteristics associated with participants' knowledge that humor is being examined, and could help address problems associated with detecting the elusive effects of humor events when viewed in isolation.

In addition, following the assertions of Cooper's (2008) relational process model, future research might explore whether the affective impact of humor is more strongly associated with relational effects (e.g., leader-member exchange quality, co-worker satisfaction, workgroup cohesiveness) than with individual effects (e.g., absenteeism and creativity). This line of thinking might suggest that affect generated through conversational humor might be somewhat bound to the relational context. However, it is also possible that affect generated by humor

might spread or generalize beyond relational contexts, thus impacting non-relational outcomes (which is assumed in Robert & Wilbanks' (2012) wheel model). In this regard, future research might examine a wider range of affectively-linked outcome variables, and explore whether affect generated through explicitly social conversational humor (e.g., affiliative or aggressive humor) might have downstream implications for non-social outcomes (e.g., individual creativity)

It will also be important for future research to tease apart the unique positive contribution that humor plays within the workplace, as distinguished from other types of positive interactions (e.g., supportive or warm behavior toward others). A number of possibilities exist with regard to this issue; a) humor is one type of interactional process, but is easily replaced by other positive interactions, b) humor and other types of positive interactions are interchangeable, but humor is either easier to implement or more adaptable to a wider range of contexts, and thus has special status, or c) the affective "punch" of humor is unique in some way, perhaps in its intensity or its ability to be used frequently, and thus it has an impact above and beyond other positive interactions. Future research exploring such questions will be challenging, and might require the design of lab-based studies that enable high degrees of experimental control, but such efforts could be helpful for identifying humor's unique contributions.

We also note that our study focused on conversational humor, which arises organically during the normal flow of interactions. As such, our results do not speak directly to other types of humor that might find their way into the workplace, such as humor in newsletters, e-mails between co-workers, or humor that people access on their own (e.g., while surfing the internet). As noted by Fleming (2005), externally generated humor (e.g., humorous speakers or "fun at work" programs) can be met with cynicism by workers, who might feel that those kinds of imposed "humor" are attempts to manipulate their behavior. But, in a world that can sometimes feel desperately in need of some levity and a little laughter, the idea that everyday conversational humor can improve affect and job attitudes is appealing. Our results suggest that humor's effects are driven, to some degree, by its ability to stimulate positive affect. On the other hand, our results also indicate that an individual's role in the humor process– particularly as producer – is an important consideration for understanding how, why, and when humor works, and how its effects are perpetuated over time. We hope these findings help to stimulate additional theorizing about humor as an important phenomenon that has been largely overlooked in the organizational literature.

References

Abel, M. H. 2002. Humor, stress, and coping strategies. *Humor* 15. 365–381. doi:10.1515/humr.15.4.365.

Booth-Butterfield, M. & M. B. Wanzer. 2017. Humor, stress, and coping. In C. Robert (Ed.), *The psychology of humor at work*, 76–95. London: Routledge.

Cooper, C. D. 2008. Elucidating the bonds of workplace humor: A relational process model. *Human Relations* 61. 1087–1115. doi:10.1177/0018726708094861.

Craik, K. H. & A. P. Ware. 1998. Humor and personality in everyday life. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic*, 63–94. Berlin: Mouton De Gruyter.

Dalal, R. S., H. Lam, H. M. Weiss, E. R. Welch & C. L. Hulin. 2009. A within-person approach to work behavior and performance: Concurrent and lagged citizenship - counterproductivity associations, and dynamic relationships with affect and overall job performance. *Academy of Management Journal* 52. 1051–1066. doi:10.5465/AMJ.2009.44636148.

Decker, W. H. 1987. Managerial humor and subordinate satisfaction. *Social Behavior and Personality* 15. 225–232. doi:10.2224/sbp.1987.15.2.225.

Duncan, W. J. 1984. Perceived humor and social network patterns in a sample of task-oriented groups: A reexamination of prior research. *Human Relations* 37. 895–907. doi:10.1177/001872678403701102.

Dwyer, T. 1991. Humor, power, and change in organizations. *Human Relations* 44. 1–19. doi:10.1177/001872679104400101.

Elfenbein, H. A. 2007. Emotion in organizations: A review and theoretical integration. *Academy of Management Annals* 4. 315–386. doi:10.1080/078559812.

Fine, G. A. 1977. Humor in situations: The role of humor in small group culture. In A. J. Chapman & H. C. Foot (Eds.), *It's a Funny Thing, Humor*, 315–318. Oxford: Pergamon Press.

Fleming, P. 2005. Workers' playtime? Boundaries and cynicism in a "culture of fun" program. *Journal of Applied Behavioral Science* 41. 285–303. doi:10.1177/0021886305277033.

Holmes, J. & M. Marra. 2002. Having a laugh at work: How humour contributes to workplace culture. *Journal of Pragmatics* 34. 1683–1710. doi:10.1016/S0378-2166(02)00032-2.

Judge, T. A., C. J. Thoresen, J. E. Bono & G. K. Patton. 2001. The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin* 127. 376–407. doi:10.1037/0033-2909.127.3.376.

Lynch, O. 2002. Humorous communications: Finding a place for humor in communication research. *Communication Theory* 12. 423–445. doi:10.1111/j.1468-2885.2002.tb00277.x.

Lyubomirsky, S., L. King & E. Diener. 2005. The benefits of frequent positive affect: Does happiness lead to success? *Psychological bulletin* 131. 803–855. doi:10.1037/0033-2909.131.6.803.

Malone, P. B. 1980. Humor: A double-edged tool for today's managers? *Academy of Management Review* 5. 357–360. doi:10.5465/AMR.1980.4288842.

Martin, R. A. 2007. *The Psychology of Humor: An Integrative Approach*. Amsterdam: Academic Press.

Martin, R. A. & N. A. Kuiper. 1999. Daily occurrence of laughter: Relationships with age, gender, and Type A personality. *Humor: International Journal of Humor Research* 12. 355–384. doi:10.1515/humr.1999.12.4.355.

Mesmer-Magnus, J., D. J. Glew & C. Viswesvaran. 2012. A meta-analysis of positive humor in the workplace. *Journal of Managerial Psychology* 27. 155–190. doi:10.1108/02683941211199554.

Miner, A. G. & T. M. Glomb. 2010. State mood, task performance, and behavior at work: A within-persons approach. *Organizational Behavior and Human Decision Processes* 112. 43–57. doi:10.1016/j.obhdp.2009.11.009.

Miner, A. G., T. M. Glomb & C. Hulin. 2005. Experience sampling mood and its correlates at work. *Journal of Occupational and Organizational Psychology* 78. 171–193. doi:10.1348/096317905X40105.

Morreall, J. 1991. Humor and work. *Humor* 4. 359–373. doi:10.1515/humr.1991.4.3-4.359.

Niven, K., D. Holman & P. Totterdell. 2012a. How to win friendship and trust by influencing people's feelings: An investigation of interpersonal affect regulation and the quality of relationships. *Human Relations* 65. 777–805. doi:10.1177/0018726712439909.

Niven, K., P. Totterdell, D. Holman & T. Headley. 2012b. Does regulating others' feelings influence people's own affective well-being? *Journal of Social Psychology* 152. 246–260. doi:10.1080/00224545.2011.599823.

Norrick, N. R. 2003. Issues in conversational joking. *Journal of Pragmatics* 35. 1333–1359. doi:10.1016/S0378-2166(02)00180-7.

Podsakoff, P. M., S. B. MacKenzie & N. P. Podsakoff. 2012. Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology* 63. 539–569. doi:10.1146/annurev-psych-120710-100452.

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

Pundt, A. & F. Herrmann. 2014. Affiliative and aggressive humor in leadership and their relationship to leader-member exchange. *Journal of Occupational and Organizational Psychology* 88(1). 108–125. doi:10.1111/joop.12081

Pundt, A. & L. Venz. 2016. Personal need for structure as a boundary condition for humor in leadership. *Journal of Organizational Behavior* 38(1). 87–107. doi:10.1002/job.2112

Raudenbush, S. W. & A. S. Bryk. 2002. *Hierarchical linear models: Applications and data analysis methods*, *2nd edn*. (Advanced Quantitative Techniques in the Social Sciences Series, No 1). Thousand Oaks, CA: Sage.

Raudenbush, S. W., A. S Bryk & R. Congdon. 2004. *HLM 6 for Windows* [Computer software]. Lincolnwood, IL: Scientific Software International, Inc.

Robert, C. & J. E. Wilbanks. 2012. The Wheel Model of humor: Humor events and affect in organizations. *Human Relations* 65. 1071–1099. doi:10.1177/0018726711433133.

Robert, C. & W. Yan. 2007. The case for developing new research on humor and culture in organizations: Towards a higher grade of manure. *Research in Personnel and Human Resource Management* 26. 205–267. doi:10.1016/s0742-7301(07)26005-0.

Roznowski, M. & C. L. Hulin. 1992. The scientific merit of valid measures of general constructs with special reference to job satisfaction and job withdrawal. In C. J. Cranny, P. C. Smith & E. F. Stone (Eds.), *Job satisfaction: How people feel about their jobs and how it affects their performance*, 165–194. New York: Maxwell Macmillan.

Ruch, W. 1998. Sense of humor: A new look at an old concept. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic*, 3–14. Berlin: Mouton De Gruyter.

Scollon, C. N., C. Kim-Prieto & E. Diener. 2003. Experience sampling: Promises and pitfalls, strengths and weaknesses. *Journal of Happiness Studies* 4. 5–34. doi:10.1007/978-90-481-2354-4_8.

Singer, J. D. & J. G. Willett. 2003. *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

Trougakos, J. P., D. J. Beal, S. G. Green & H. M. Weiss. 2008. Making the break count: An episodic examination of recovery activities, emotional experiences, and positive affective displays. *Academy of Management Journal* 51(1). 131–146.

Vinton, K. L. 1989. Humor in the workplace: It is more than telling jokes. *Small Group Behavior* 20. 151–166. doi:10.1177/104649648902000202.

Warren, C. & A. P. McGraw. 2014. Appreciation of humor. In S. Attardo (Ed.), *Encyclopedia of Humor Studies*, 52–55. Los Angeles: Sage.

Wegener, D. T. & R. E. Petty. 1994. Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality and Social Psychology* 66. 1034–1048.

Weiss, H. M. & R. Cropanzano. 1996. Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. *Research in Organization Behavior* 18. 1–74.

Weiss, H. M., J. P. Nicholas & C. S. Daus. 1999. An examination of the joint effects of affective experiences and job beliefs on job satisfaction and variations in affective experiences over time. *Organizational Behavior and Human Decision Processes* 78. 1–24.

Wilkie, D. (2013, October 13). Inside joke: Humor can help the bottom line. SHRM. Retrieved from http://www.shrm.org/hrdisciplines/employeerelations/articles/pages/jokes-humor-workplace.aspx.

Ziv, A. 1981. The self concept of adolescent humorists. *Journal of Adolescence* 4. 187–197. doi:10.1016/S0140-1971(81)80038-3.