One in nine Americans works in sales, persuading people to purchase products and services ranging from homes and telephones to insurance and cars (U.S. Bureau of Labor Statistics, 2012). Given that selling is a vital part of the economy, psychologists have a long-standing interest in the traits of successful salespeople. According to conventional wisdom, productive salespeople are likely to be extraverted, which means they tend to be assertive and enthusiastic (DeYoung, Quilty, & Peterson, 2007). Studies have shown that extraverted people tend to gravitate toward sales (Barrick, Mount, & Gupta, 2003) and are more likely than introverts to be selected for sales positions by managers (Dunn, Mount, Barrick, & Ones, 1995). As Costa and McCrae (1992) explained, “salespeople represent the prototypical extraverts in our culture” (p. 15).

Research points to three major reasons for why extraverts should have an advantage in sales. First, selling requires engaging with a wide range of potential customers, and, by virtue of their assertiveness and enthusiasm, extraverts tend to be outgoing, sociable, and comfortable initiating interactions with others (Furnham & Fudge, 2008). Second, selling involves persuading customers to buy a product or service, and extraverts tend to express confidence and contagious levels of enthusiasm and energy (Vinchar, Schipmann, Switzer, & Roth, 1998). Third, selling often depends on convincing customers to change their attitudes and behaviors, and extraverts are more likely than introverts to be firm and forceful, refusing to take no for an answer (Stewart, 1996). As Barrick, Mount, and Judge (2001) summarized, in sales, “being sociable, gregarious, assertive, energetic, and ambitious is likely to contribute to success” (p. 11).

However, studies have shown weak and inconsistent relationships between extraversion and sales performance. For example, extraversion was not significantly related to performance in wholesale manufacturing sales (Barrick, Mount, & Strauss, 1993), health and fitness sales (Furnham & Fudge, 2008), or business-to-business sales (Stewart, 1996). In pharmaceuticals, extraversion was significantly related to performance in selling an

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**Abstract**

Despite the widespread assumption that extraverts are the most productive salespeople, research has shown weak and conflicting relationships between extraversion and sales performance. In light of these puzzling results, I propose that the relationship between extraversion and sales performance is not linear but curvilinear: Ambiverts achieve greater sales productivity than extraverts or introverts do. Because they naturally engage in a flexible pattern of talking and listening, ambiverts are likely to express sufficient assertiveness and enthusiasm to persuade and close a sale but are more inclined to listen to customers’ interests and less vulnerable to appearing too excited or overconfident. A study of 340 outbound-call-center representatives supported the predicted inverted-U-shaped relationship between extraversion and sales revenue. This research presents a fresh perspective on the personality traits that facilitate successful influence and offers novel insights for people in choosing jobs and for organizations in hiring and training employees.

**Keywords**

personality, social influences, personnel selection

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In light of these benefits and costs, I propose that extraversion and sales performance are related to different aspects of job performance. Years ago, Coombs and Avrunin (1977) argued that “good things satiate and bad things escalate” (p. 225). In line with this general principle, there is reason to believe that in sales, extraversion may have diminishing returns and increasing costs. High levels of assertiveness and enthusiasm may reduce the effectiveness of extraverted salespeople in two key ways.

First, extraverted salespeople may focus more heavily on their own perspectives than on customers’ perspectives. Although selling may require a degree of assertiveness and enthusiasm, it also demands consideration of the needs, interests, and values of customers (Jaramillo & Grisaffe, 2009). Judge, Piccolo, and Kosalka (2009) suggested that people who are highly extraverted “like to be the center of attention” and often “quickly bounce from one conversation or idea to another” (p. 868). Recent studies have shown that extraverts tend to gravitate toward the spotlight (Ashton, Lee, & Paunonen, 2002) and are more likely than introverts to dominate conversations, expressing so much excitement for their own ideas that they may inadvertently suppress or neglect others’ perspectives (Grant, Gino, & Hofmann, 2011). As a result of these tendencies, extraverted salespeople may spend too much time delivering assertive, enthusiastic pitches and too little time asking questions and listening to customers’ answers.

Second, extraverted salespeople may elicit negative responses from customers. As they enthusiastically assert the value of their products and services, extraverts may be perceived as overly excited and confident (Ames & Flynn, 2007; Judge et al., 2009). Customers may interpret this excitement and confidence as a signal that salespeople are attempting to influence them (Campbell & Kirmani, 2000). Once customers recognize persuasive intent on the part of a salesperson, they are likely to strive to maintain control and protect themselves by scrutinizing the message more carefully, marshaling counterarguments, and resisting or rejecting the salesperson’s influence (Friestad & Wright, 1994; Williams, Fitzsimons, & Block, 2004).

In light of these benefits and costs, I propose that there is a curvilinear, inverted-U-shaped relationship between extraversion and sales performance. More specifically, I predict that ambiverts, people who fall in the middle of the extraversion spectrum (Eysenck, 1971), should achieve higher sales than introverts or extraverts do. Compared with introverts, ambiverts are more likely to display the requisite levels of enthusiasm and assertiveness to stimulate customer interest in products and services and convert this interest into sales. At the same time, ambiverts may strike a balance between talking and listening, avoiding the risks that extraverts face of failing to understand customers’ needs and appearing instrumental or pushy. Research has shown that the more extraverted an individual is, the more frequently he or she will engage in assertive and enthusiastic behaviors (Fleeson & Gallagher, 2009), regardless of context (Little & Joseph, 2006). Whereas extraverts may seek stimulation and social attention at the expense of listening carefully to customers’ concerns, ambiverts are likely to be more flexible in the ways in which they engage with customers, drawing from a wider repertoire of behavioral options to find the appropriate balance between selling and serving. Thus, I expected that ambiverts should be more productive salespeople than introverts and extraverts are.

To test the relationship between extraversion and sales performance, I conducted a study of 340 outbound-call-center representatives, measuring their extraversion and tracking their sales revenue over the following 3 months. The findings challenge the dominant assumption that extraversion is advantageous to sales performance and shed light on prior conflicting results. In terms of theory, my research answers calls to explore the costs of extraversion in work settings (Bendersky & Shah, in press; Grant et al., 2011; Judge et al., 2009) and the curvilinear effects of personality traits on job performance (Grant & Schwartz, 2011; Le et al., 2011). In practical terms, the findings suggest that researchers should reconsider traditional assumptions about career choice, hiring, and training.

**Method**

I collected data from a company that operates outbound call centers around the United States. Employees were responsible for generating revenue from new prospects and existing customers. I sent a survey link to all of the company’s 807 employees, inviting them to participate in a study of the predictors of job performance. I received complete responses from 340 employees, for a response rate of 42.1%. Participating employees were 71% male and 29% female, with an average age of 19.9 years (SD = 1.70) and an average job tenure of 6.14 months (SD = 7.86).

Participants completed the 20-item Big Five personality measure (developed and validated by Donnellan, Oswald, Baird, & Lucas, 2006), which includes 4 items for each of the five personality traits. Responses were made using 7-point Likert scales, from 1 (disagree strongly) to 7
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The measure of extraversion included items such as “I am the life of the party” and “I keep in the background” (reverse-scored; $\alpha = .85$). In light of the fact that extraversion often correlates with other traits (Olson, 2005), I also controlled for employees’ scores on measures of the other four Big Five personality traits: conscientiousness ($\alpha = .78$), agreeableness ($\alpha = .80$), openness ($\alpha = .71$), and neuroticism ($\alpha = .75$). I measured sales performance by tracking each employee’s revenue, which was highly reliable from week to week ($\alpha = .81$), over the next 3 months while controlling for hours worked and job tenure.

**Results**

To test my hypothesis, I conducted hierarchical regression analyses following the procedures recommended by Aiken and West (1991). As displayed in Table 1, the linear term for extraversion was not a significant predictor of sales revenue, but the quadratic term was, indicating a curvilinear relationship.\(^2\) These results held up even after controlling for the linear and quadratic effects of conscientiousness, agreeableness, openness, and neuroticism, none of which were statistically significant predictors of sales revenue.

The negative coefficient for the quadratic term, coupled with the null coefficient for the linear term, indicated a symmetrical inverted-U-shaped relationship (Aiken & West, 1991), which is illustrated in Figure 1. According to the regression equation, maximum revenue should be reached by employees with a 4.5 on the 7-point extraversion scale, after which revenue should decline. Ambiverted employees at the mean of extraversion are predicted to generate $151.38 per hour, compared with $114.96 for

| Table 1. Results From a Hierarchical Regression Analysis Predicting Sales Revenue |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Predictor                        | Step 1 ($R^2 = .30^{**}$)        | Step 2 ($R^2 = .32^{**}$)        | Step 3 ($R^2 = .32^{**}$)        | Step 4 ($R^2 = .33^{**}$)        | Step 5 ($R^2 = .33^{**}$)        |
|                                 | $\beta$                         | $t$ (325)                       | $\beta$                         | $t$ (324)                       | $\beta$                         | $t$ (314)                       |
| Hours worked                    | 0.49                            | 10.42**                         | 0.50                            | 10.69**                         | 0.49                            | 10.57**                         |
| Job tenure                      | 0.22                            | 4.79**                          | 0.23                            | 4.93**                          | 0.23                            | 4.90**                          |
| Extraversion                    | 0.03                            | 0.66                            | -0.01                           | -0.24                           | -0.13                           | -2.76*                          |
| Extraversion$^2$                |                                  |                                 |                                 |                                 |                                 |                                 |
| Conscientiousness               | -0.09                           | -1.77                           | -0.09                           | -1.82                           | -0.09                           | -1.84                           |
| Agreeableness                   | -0.01                           | -0.13                           | -0.01                           | -0.09                           | 0.01                            | 0.11                            |
| Openness                        | 0.01                            | 0.11                            | 0.01                            | 0.11                            | 0.01                            | 0.09                            |
| Neuroticism                     | 0.01                            | 0.22                            | -0.01                           | -0.12                           | -0.01                           | -0.18                           |
| Conscientiousness$^2$           |                                  |                                 |                                  |                                 |                                  |                                 |
| Agreeableness$^2$               | 0.02                            | 0.30                            | 0.02                            | 0.25                            | 0.02                            | 0.25                            |
| Openness$^2$                    | 0.01                            | 0.22                            | 0.01                            | 0.15                            | 0.01                            | 0.15                            |
| Neuroticism$^2$                 | 0.06                            | 1.24                            | 0.07                            | 1.29                            |                                  |                                 |
| Extraversion × Agreeableness    |                                  |                                 |                                  |                                 | 0.36                            | 1.13                            |
| Extraversion$^2$ × Agreeableness|                                  |                                 |                                  |                                 |                                  | -0.69                           |
|                                 |                                  |                                 |                                  |                                 |                                  | -1.02                           |

Note: The only step in which the variance explained increased significantly was from Step 1 to Step 2, via the addition of the quadratic term for extraversion, $F(1, 324) = 7.60, p < .01$. Although the 2% increase in variance in sales revenue explained by the curvilinear effect may technically fall in the range of a small or medium effect, this does not mean that the effect is unimportant (Cortina & Landis, 2009; Prentice & Miller, 1992), because it can have meaningful implications for employer hiring and employee career decisions. Further, the use of incremental analyses may underestimate the size of the effect (LeBreton, Hargis, Griepentrog, Oswald, & Ployhart, 2007), especially given that the curvilinear effect relies on an interaction term with constrained reliability (Edwards, 2008).

\(^{*}p < .01. \^{**}p < .001.\)
highly extraverted employees (1.5 SD above the mean) and $126.80 for highly introverted employees (1.5 SD below the mean).

This pattern was mirrored by the actual data, which are presented in Figure 2 in the form of a box plot. The employees with the highest revenue per hour—$208.34 per hour, compared with $137.73 for the full sample—were those who had an extraversion score at the exact midpoint of 4.0. Ambiverted employees with extraversion scores between 3.75 and 5.50 averaged $154.77 per hour (95% confidence interval, CI = [$127.44, $182.40]), compared with hourly revenue averages of $120.10 for introverts (extraversion scores below 3.75; 95% CI = [$96.39, $143.82]) and $125.19 for extraverts (extraversion scores above 5.50; 95% CI = [$103.63, $146.75]). Over the 3-month interval, ambiverts achieved average revenues of $16,393.05 (95% CI = [$14,092.13, $18,693.97]), producing 24% more revenue than introverts ($13,226.60; 95% CI = [$10,899.40, $15,553.80]) and 32% more revenue than extraverts ($12,401.13; 95% CI = [$8,167.84, $16,634.42]).

An alternative explanation for these findings is presented by interpersonal-circumplex theory (e.g., Trapnell & Wiggins, 1990). From this perspective, the right side of the curve may not be a function of extraversion alone but, rather, of high extraversion coupled with low agreeableness: Disagreeable extraverts may come across as arrogant or excessively dominant, whereas agreeable extraverts are likely to create impressions of gregariousness and warmth. To test this interpretation, I examined whether agreeableness moderated the linear and quadratic relationships between extraversion and sales revenue.

As the final step in Table 1 shows, agreeableness did not interact significantly with extraversion or with extraversion squared, and the curvilinear relationship between extraversion and sales revenue remained significant; these patterns held after eliminating the other personality traits from analysis to reduce multicollinearity and increase power. Supplementary analyses showed that conscientiousness, openness, and neuroticism also failed to moderate the linear and quadratic relationships between extraversion and sales revenue, and that the quadratic relationship was still significant. These results suggest that ambiverts have a sales advantage over extraverts regardless of their standing on the other four Big Five personality traits.

Discussion

My findings call into question the long-standing belief that the most productive salespeople are extraverted. The surprisingly weak and inconsistent results from previous
studies may be due to the fact that researchers have focused on linear relationships, investigating the benefits of extraversion but overlooking the costs. This is consistent with recent observations that psychologists have neglected the dark sides of personality traits, as the very attributes that facilitate job performance can, at high levels, become too much of a good thing (Grant & Schwartz, 2011; Le et al., 2011).

Although studies have demonstrated that job performance can suffer if employees are too conscientious, too emotionally stable, too generous, or too learning oriented (Grant & Schwartz, 2011; Le et al., 2011), research has yet to address whether sales performance can suffer if employees are too extraverted. By showing that moderately extraverted employees sell more productively than do employees who are low or high in extraversion, my research constitutes a step toward answering calls for greater attention to the dark sides of extraversion (Bendersky & Shah, in press; Grant et al., 2011; Judge et al., 2009).

Future research should examine whether there are factors, such as clear reward structures (Stewart, 1996), that enable highly extraverted employees to sell as effectively as ambiverts and examine whether the results vary by facets of extraversion (Vinchur et al., 1998). For example, it is possible that the curvilinear relationship between extraversion and sales is explained by a positive effect of enthusiasm at low to moderate levels of extraversion, which is outweighed by the negative effect of assertiveness at high levels of extraversion. It will be important to study whether ambiverts consistently exhibit more moderate assertiveness and enthusiasm than introverts and extraverts do or whether they strike a flexible balance by alternating between very low and very high levels of assertiveness and enthusiasm. For example, researchers may use experience-sampling methods to track the frequency and intensity of assertive and enthusiastic behaviors of ambiverts over time (e.g., Fleeson & Gallagher, 2009).

It will also be worthwhile for further studies to investigate whether using more comprehensive measures of personality traits would yield a different pattern of results. For measuring constructs as broad as the Big Five personality traits, short scales tend to be less reliable than longer, multidimensional scales, and the reliability of quadratic terms and interactions is a multiplicative function of the reliability of the components (Edwards, 2008). Given that limited reliabilities may have prevented me from detecting a moderating role of agreeableness, researchers may gain finer-grained insights into this issue by measuring the social traits of extraversion and agreeableness with interpersonal-adjective scales (e.g., Trapnell & Wiggins, 1990). Further, it remains to be seen whether there are other personality traits or behavioral patterns that can reduce or eliminate the negative effects of high extraversion on sales productivity.

In the popular press, authors have recently argued that there is a Western cultural bias favoring extraversion (Cain, 2012). Nowhere is this bias more clear than in sales, where it seems only natural that the most assertive and enthusiastic people will be the most productive (Barrick et al., 2001; Costa & McCrae, 1992). Yet my findings suggest that less extraverted people may be missing out on productive careers and hiring managers may be missing out on star performers. When less extraverted people do end up in sales, many managers train them to emulate the assertive, enthusiastic qualities of their highly extraverted counterparts. My research indicates that organizations stand to benefit from training highly extraverted salespeople to model some of the quiet, reserved tendencies of their more introverted peers.

The finding that sales performance was highest among people in the ambiverted range constitutes good news for aspiring salespeople (Pink, 2012). In the world population, levels of extraversion typically follow the shape of a bell curve, with most people falling somewhere in the middle (McCrae & Costa, 2003; Ones & Dilchert, 2009). If most people are ambiverted rather than introverted or extraverted, the logical conclusion is that most people are well suited to selling.

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Declaration of Conflicting Interests
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Notes
1. There may be a psychophysiological basis for the greater behavioral flexibility of ambiverts relative to extraverts. In terms of neocortical arousal, ambiverts tend to operate near the optimal level, whereas extraverts tend to be chronically understimulated (Eysenck, 1971; Little & Joseph, 2006). To avoid boredom and maintain engagement, extraverts regularly seek out stimulation and social attention. Ambiverts, by contrast, can devote greater time to listening without facing the risk of understimulation.
2. The lack of a linear relationship for extraversion may have been driven in part by range restriction. As is typical in samples of salespeople (Barrick et al, 2003) and Americans (McCrae, Terracciano, & 79 members of the Personality Profiles of
Cultures Project, 2005), employees’ extraversion scores were skewed slightly to the right, with a mean of 4.86 (skewness = −.37, kurtosis = −.66). However, the variance was high (SD = 1.33), and the scores covered nearly the full range of 1 to 7, with a minimum of 1.5 and a maximum of 7.0, which suggests that range restriction was not a major limitation with regard to detecting curvilinear effects.

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