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Pharmaceutical Representatives' Social Influence Behaviors and Communication Orientations: Relationships with Adaptive Selling and Sales Performance

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Abstract

This study investigated the relationships between pharmaceutical sales representatives (PSR) social influence behaviors and communication orientations in the workplace with regard to adaptive selling and sales performance. Participants were 55 (23 men, 32 women) pharmaceutical sales representatives employed in a variety of for-profit agencies. The PSR's completed self-report measures regarding nonverbal immediacy, Machiavellianism, humor, physical attractiveness, responsiveness, caring, competence, motivation, and adaptive selling. These same characteristics accounted for substantial amounts of variance in sales performance and adaptive selling. High Machiavellian PSRs self-reported a similar amount of nonverbal immediacy as the low Machiavellian PSRs. Implications for theory and practice as well as directions for future research are discussed.

Keywords: pharmaceutical sales representatives; communication in sales contexts; social influence; nonverbal immediacy; physical attractiveness; Machiavellianism; credibility

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According to a recent *CBS News/New York Times* poll, the top health care (domestic) issue in the United States was the cost of prescription drugs (2005). The pharmaceutical industry spends $12-15 billion per year, or $8,000-15,000 per physician, on marketing, with one drug detailer for every 4.7 office-based physicians (Blumenthal, 2004). Pharmaceutical sales representatives (PSRs hereinafter) are the most direct point of contact with physicians (Andaleeb, 1996; Anadaleeb & Tallman, 1995). The PSRs who make personal visits to physicians in their area are a conduit for pharmaceutical distribution (Scharitzer & Kollarits, 2000). PSRs' primary responsibilities include marketing their company's products and attempting to persuade physicians to prescribe their brands to their patients. Gaedeke, Tootelian, and Sanders (1999) reported that 79 percent of physicians valued the PSRs detailing of new products. Moreover, PSRs' effective communication with physicians (and other healthcare professionals) is crucial to engendering positive perceptions of the sales representative and to increasing sales.

Social Skills and Compliance-Gaining

Social skills are often described as interpersonal or communication competence (Spitzberg & Cupach, 1989). Spitzberg and Dillard (2002) define social skills as "goal-directed actions in interpersonal contexts that are learnable, repeatable, and variable in their quality" (p. 90). Most, if not all, interpersonal communication is goal-directed (Dillard, 1989, 1990, 1993). While a great deal of human social behavior is genetically-based (Beatty, McCroskey, & Valencic, 2001; McCroskey, Daly, & Martin, 1998), innate skills are often "expanded, refined, and repackaged into more elaborate sets and sequences of skills" (Spitzberg & Dillard, 2002, p. 91). As a function of their experience in the field, effective PSRs quickly learn which particular communication skills lead to success in the sales environment, specifically sales results and the ability to manage one's impression as intended. Salespersons who adapt to buyers are more successful (McFarland, Challagalla, & Shervani, 2006). The individual PSR's ability to adjust to interactions with the physician by selecting from a repertoire of communicative behaviors may lead to the likelihood of success at sales. PSRs' motivation and ability to adapt to each buyer are enhanced by the salespersons' relational communication orientations and traits (Boorom, Goolsby, & Ramsey, 1998). The purpose of the present study is to examine the social influence strategies employed by pharmaceutical sales representatives in the workplace. Specifically, the current study explores the relationships between PSRs' self-reported nonverbal immediacy, caring, responsiveness, communicator competence, physical attractiveness, Machiavellianism, humor, adaptive selling, and sales performance. The goal of the present study is to help provide a more complete understanding of communication's relationship to effectiveness in the organizational (pharmaceutical sales) setting.

Review of the Literature and Research Objectives

Theoretical Foundation

Two theories, Impression Management and Ingratiation, provide a useful framework for investigating the influence of communicator orientations and behavior in relation to adaptiveness and sales performance. Impression Management Theory (Goffman, 1959; Tedeschi, 1981) posits that individuals want to be perceived in a positive light and thus communicate in order to create desired impressions. Goffman was concerned with the ways in which impression management

behaviors mutually facilitated socially effective relationships. According to Jones and Pittman (1982), the process of self-presentation involves regulating one's own behavior to create a specific impression for an audience. Weitz (1979) suggests that, "...the nature of the salesperson's actions (behaviors) in specific selling situations ultimately determines how successful the salesperson will be" (p. 76). Closely related to impression management is ingratiation theory (Jones, 1964). Ingratiation is "motivated behavior directed toward the goal of eliciting increased attraction from the other person to obtain a specific benefit (Pandey & Rastogi, 1979). Although no personality profile exists for the ideal salesperson (Anselmi & Zemanek, 1999), scholars agree that successful salespeople are effective, competent communicators who are punctual, enthusiastic, social, task-oriented, and competitive (Comstock & Higgins, 1997; Weitz, Castleberry, & Tanner, 2007). A successful PSR effectively manages the impressions he or she makes with healthcare professionals. Given the goal-directed nature of influencing physicians, these individual difference variables have the potential to impact the success or failure of sales transactions. Empirical attention within communication has not been directed to the extent to which these variables are related to sales performance and job satisfaction within the pharmaceutical sales context. The present research focuses on important communication variables within an applied setting with the goal of increasing our understanding of communication behaviors.

Nonverbal Immediacy

Nonverbal messages play a central role in interpersonal interactions such as impression formation, deception, attraction, social influence, and emotional expression (Burgoon, Buller, & Woodall, 1996). Studies have explored how nonverbal communication alters attitudes and overt behaviors of message recipients (Berry & Zebrowitz-McArthur, 1988; Burgoon, et al., 1996). Nonverbal behavior plays an important role in an individual's self-presentation to others (Levine & Feldman, 1997; Reiss & Rosenfeld, 1980). Nonverbal immediacy is a compendium of behaviors related to the perception of closeness in an interpersonal relationship (Mehrabian, 1971). Communication behaviors that have been known to increase immediacy include: eye contact, gestures, relaxed body position, smiling, vocal expressiveness, movement, and proximity (Andersen, 1979). "People are drawn towards persons and things they like, evaluate highly, and prefer; and they avoid or move away from things they dislike, evaluate negatively, or do not prefer" (Mehrabian, 1971, p. 1). Nonverbal immediacy is a means for salespeople to have influence on customers while increasing interpersonal affect and helping to meet sales objectives.

Successful sales are often based on likeability of the source (Brown, 1990; Jones, Moore, Stanland, & Wyatt, 1998). Sales individuals communicate liking toward their clients and, in turn, cultivate liking for themselves through their own nonverbal expressions. Likeable sales people tend to smile more, use more eye contact, engage in affirmative head nodding, and establish open body positions (Leathers, 1988). As a result of conducting a meta-analysis, Higgins, Judge, and Ferris (2003) discovered that ingratiation and rationality have positive effects on work outcomes. Weilbaker (1990) examined three individual parties (salespeople, sales managers, buyers) noted that out of three groups, buyers (i.e., physicians) placed the highest value on the salesperson likeability, suggesting that those sales representatives who are friendly, courteous, and helpful are more likely to cultivate more positive affect than their non-immediate counterparts. Nonverbal immediacy is a means for PSRs to build rapport and trust

with physicians and adapt their relational messages accordingly. PSRs can select from an existing repertoire of nonverbal immediacy behaviors or develop a unique approach to each client to facilitate communication effectiveness. The previous rationale led to the following hypothesis:

H1: PSRs' nonverbal immediacy is positively related to adaptive selling.

Physical Appearance

Early research previously demonstrated the effects of a source's physical attractiveness on receiver attitude change (Berscheid et al., 1971; Chaiken, 1979; Horai, Nacari, & Faloultah, 1974; Mills & Aronson, 1965; Widgery, 1974, Widgery & Ruch, 1981). Attractive individuals may be more persuasive than unattractive persons partly because they possess characteristics that dispose them to be more effective communicators (Chaiken, 1979). Adding to the confusion and interpretation of the research results, people often are not aware or willing to admit the effectiveness and impact of physical appearance on their responses (Caballero & Solomon, 1984). Given the contradictory evidence and complex relationship, scholars have generally agreed that attractiveness operates within interpersonal interactions and influence, marginally, at best (Morrow & McElroy, 1984) and plays a limited role in cognitive processes (McElroy & DeCarlo, 1999). Attractiveness seems to matter more if receivers have low involvement or rely on peripheral processing (Petty & Cacioppo, 1986). Reingen and Kernan (1993) discovered that in simulated sales scenarios, buyers treat attractive sellers more cordially and were more likely to yield to their requests than was found for unattractive sellers.

Cialdini (2001) argues that physical attractiveness is a predictor of interpersonal liking. It stands to reason that physically attractive PSRs are more likely to be successful at sales than those who are less physically attractive. Physically attractive individuals generally receive more favorable evaluations than their less attractive counterparts (Dion, Berscheid, & Walster, 1972). In Dion et al.'s (1972) study, participants attributed more socially desirable characteristics to attractive individuals, reporting that they were more friendly, warm, stable, and more sincere than the less attractive sources. Concerned about their own image, pharmaceutical companies are likely to recruit and hire physically attractive individuals to sell their products and generate revenue (Weilbacker & Merritt, 1992). Although it is unlikely that a PSR would sell on the basis of personal attractiveness alone, it remains an important social influence cue within sales. Recalling Mehrabian's (1971) concept of immediacy which states that people are drawn towards individuals whom they find appealing, PSR physical attractiveness serves as a form of nonverbal immediacy. Hence,

H2: PSRs' physical attractiveness is positively related to PSR nonverbal immediacy.

Source Expertise

To have confidence and be effective at sales, PSRs need to perceive themselves as being competent in the eyes of others. Competence is one of the primary dimensions of source credibility (McCroskey & Teven, 1999). The source credibility of salespeople affects their ability to influence customers. Source credibility within sales is enhanced by increasing perceived expertise, trustworthiness, and attractiveness (Pederson, Wright, & Weitz, 1984). In the selling context, PSRs need to demonstrate expertise when interacting with physicians and when representing their company's products. An individual's choices about communicating often depend on their self-perception of their competence (Richmond, McCroskey, &

McCroskey, 2005). Source expertise has been found to be a more powerful determinant of social influence than physical attractiveness (Maddux & Rogers, 1980). Therefore, PSR competence would likely be positively associated with adaptive selling, nonverbal immediacy, physical attractiveness, and motivation, meaning that effective PSRs would be well versed in how to adapt their communication to the various physicians they encounter, employ appropriate nonverbal immediate behaviors, look their best on the job, and be motivated to sell their company's products, and close sales. Nonverbal immediacy is also a means of gaining access to physicians given the competitive nature of the business, suggesting one's competence in navigating through certain obstacles. Direct eye contact can impact receivers' perceptions of a source's competence (Brooks, Church, & Fraser, 1986) and persuasiveness (Burgoon, Manusov, Mineo, & Hale, 1985). This reasoning led to the following hypothesis:

> H3: PSRs' competence is positively related to nonverbal immediacy, physical attractiveness, adaptive selling, and motivation.

Machiavellianism

One personality variable often related to persuasion and social influence is Machiavellianism. Those individuals who possess the Machiavellian trait may be more adept at improvisation and presentation skills than the average person (Christie & Geis, 1970). "High Machs" have learned to master the communication skills necessary to achieve their personal and professional goals. Machiavellianism may therefore be related to pharmaceutical sales. Machiavellianism is an individual difference variable that is explained in terms of manipulative, persuasive behavior to accomplish personal objectives. Vleeming (1979) notes that, "Behavior on this dimension ranges from a cool detachment, i.e., the high Machiavellian, to high involvement with people, i.e., the low Machiavellian" (p. 295). From the results of over 30 independent studies, Christie and Geis (1970) concluded,

> "High Machs manipulate more, win more, are persuaded less, persuade others more, and otherwise differ significantly from low Machs as predicted in situations in which subjects interact face to face with others, when the situation provides latitude for improvisation and in situations in which affective involvement with details irrelevant with winning distracts low Machs" (p. 312).

As both young and older adults, high Machiavellians, more skilled at manipulation, achieve higher academic grades in school (Burgoon, 1971; Marks & Lindsay, 1966; Singer, 1964), have greater levels of occupational prestige (Sewell & Hauser, 1975; Turner & Martinez, 1977), are chosen and identified as leaders (Christie & Geis, 1970), receive more positive ratings of leadership and performance (Deluga, 2001), and appear to be more socially attractive (Cherulnik, Way, Ames, & Hutto, 1981) than are low Machiavellians. The disadvantages of being highly Machiavellian include greater self-reports of loneliness (Bell & Daly, 1985), experiencing social rejection (Wilson, Near, & Miller, 1998) and less satisfaction at work (Walter, Anderson, & Martin, 2005).

Michael Burgoon (1971) was one of the first scholars to suggest that Machiavellianism might influence communication behaviors. Much of the previous research on Machiavellianism has focused on the effectiveness of highly Machiavellian individuals in a wide variety of contexts. There is general agreement that these individuals are more effective in their influence attempts and enjoy influencing others. Less agreement is associated with how these individuals might communicate differently from those who have moderate or low levels of

Machiavellianism, given the questionable construct validity (Hunter, Gerbing, & Boster, 1982). Are high Machs more "cool and detached"? Are low Machs more caring and responsive towards others? Given the ambiguous research findings relating to Machiavellianism and sales performance in general and the uncharted area of pharmaceutical sales in communication research specifically, the following research questions were posed:

RQ1: Do low or high Machiavellian PSRs report more nonverbal immediacy?

RQ2: Do low or high Machiavellian PSRs report more caring?

Previous research suggests that humor may facilitate social influence (Hampes, 1999; Kuiper, McKenzie, & Belanger, 1995; Lyttle, 2001; O'Quin & Aronoff, 1981). Individuals who use humor are often perceived as more communicatively competent, credible, and socially attractive (Wanzer, Booth-Butterfield, & Booth-Butterfield, 1995, 1996; Wrench & Booth-Butterfield, 2003). PSRs may use humor to enhance their interactions and influence with physicians. Machiavellians may engage in more cognitive processing rather than relational of affective communication. Machiavellianism represents an individual difference variable which has been found to be positively related to use of sarcasm (Rockwell, 2006). Hence, Machiavellians may engage in humor production. The following hypothesis was advanced:

H4: PSRs' Machiavellianism is positively related to humor use.

Pharmaceutical sales representatives' nonverbal immediacy, caring, responsiveness, Machiavellianism, humor, physical attractiveness, competence, and motivation are important characteristics critical to the interpersonal communication process that may have strong effects on sales performance. Thus, the following research question is posed:

RQ3: To what extent do pharmaceutical sales representative characteristics predict sales performance?

Weitz (1981) advanced the "adaptive selling" perspective, stressing the need for salespeople to tailor their approaches to specific types of sales situations and buyers. Sales performance results largely from the salesperson's ability to create and modify messages through interactive communication (Boorom, et al., 1998). Within sales interactions, all of the variables explored within the present study--PSRs' nonverbal immediacy, caring, responsiveness, Machiavellianism, humor, self-perceived competence, physical attractiveness, and motivation--serve as components within that adaptive selling perspective. These are all communication orientations that bear importantly on the salespersons' potential to enhance his/her communication effectiveness with the buyer. Thus, the final research question is posed:

RQ4: To what extent do pharmaceutical sales representative characteristics predict adaptive selling?

Method

Participants

Participants were 55 (23 men, 32 women) pharmaceutical sales representatives employed in a variety of for-profit agencies in the state of Texas. The for-profit agencies were all national pharmaceutical companies ranked in the Fortune 500. The mean age of the participants was 39.13 (SD = 6.67) with 95% having a college education (approximately 5 percent had postgraduate work or a graduate degree beyond a college education). Twenty-nine percent of the representatives had 1-3 years experience on the job, 28% had 4-7 years experience, 27% had 8-

12 years experience, and 16% had over 12 years of experience.

Participation was voluntary and anonymous. A letter was first sent out (by mail or email) to the individual PSRs informing them of the general purpose of the study and inquiring about their level of interest in participating in the study. After the PSR consented to participate in the study, he or she was provided with a self-administered survey (by mail or in person) to complete. The participants were asked to mail their completed (anonymous) survey to the second author. No incentives were offered for participation in the study. Out of 150 surveys distributed, fifty-five completed surveys were returned, generating a return rate of 37 percent.

Measurement

Nonverbal immediacy. The Nonverbal Immediacy–Self Report (NIS-S) was used as the measure for the immediacy orientation of the pharmaceutical representatives (Richmond, McCroskey, & Johnson, 2003). Respondents rated on a five-point scale how each item applied to them as they exhibited those behaviors at work. The responses ranged from Never (1) to Very Often (5). Cronbach's *alpha* for the NIS-S for this study was .91.

Responsiveness. The Assertiveness-Responsiveness Measure (Richmond & McCroskey, 1990) was used to assess the socio-communicative orientation of the pharmaceutical sales representatives. Only the ten items related to responsiveness in this instrument were analyzed. In this study, pharmaceutical representatives were asked to reference "the way you communicate at work" to estimate the sales representative's responsiveness. The responses on each scale range from Always True (7) to Never True (1). Cronbach's *alpha* for the responsiveness items was .90.

Machiavellianism. The Machiavellianism Scale is comprised of 10 items (Allsopp, Eysenck, & Eysenck, 1991). Respondents rated on a seven point scale how each item applied to them. The responses ranged from Strongly Agree (7) to Strongly Disagree (1). Cronbach's *alpha* for this scale was .82.

Humor. Pharmaceutical sales representatives' use of humor was assessed by using the Richmond Humor Assessment Instrument (RHAI) (Richmond, Wrench, & Gorham, 2001). This is a 16-item instrument consisting of responses from 1 "Strongly Disagree" to 5 "Strongly Agree." Sample items include: "I relate amusing stories, jokes, and funny things very well to others" and "people usually laugh when I make a humorous remark." Past alpha reliability of the scale has been found to be .89 (Wrench & McCroskey, 2001). Cronbach's *alpha* for this scale as used in this study was .95.

Self-reported caring. Traditional research relating to source credibility has focused exclusively on a receiver/perceiver view of credibility. Restricting the definition of caring solely to the receivers' perspective ignores the potential for individual differences within communication interactions. Presumably, a PSR's caring for his/her customers impacts his/her choice of communication behaviors. In an effort to measure PSRs' self-reported caring orientation, items on Teven and McCroskey's (1997) credibility instrument were reworded. The resulting caring items completed by PSRs were: *care about others–don't care about others, have others' interests–don't have others' at heart-interests at heart, self-centered–not self-centered, unconcerned with others–concerned with others, insensitive–sensitive, not understanding–understanding*. The self-report caring instrument was composed of 6, seven-step semantic-differential scales. Responses to items were recoded so that higher scores reflected greater caring for others. In the present study, Cronbach's *alpha* for this scale was .85.

Self-reported competence. Six items from Teven and McCroskey's (1997) measure of source credibility were used to assess PSR's self-reports of competence. The competence items completed by PSRs were*: intelligent–unintelligent, untrained–trained, inexpert–expert, informed–uniformed, incompetent–competent, bright–stupid*. Cronbach's *alpha* for this scale was .79.

Physical attractiveness. The pharmaceutical representatives were asked to assess their own self-perceived physical attractiveness. The respondents completed the 6-item measure of physical attraction (McCroskey & McCain, 1974). Cronbach's *alpha* for this self-report instrument was .87.

Adaptive selling. The adaptive selling scale (ADAPTS-SV) developed by Robinson et al. (2002) was also used in the present study. The four-item (shortened version) items of adaptive selling include: "When I feel that my sales approach is not working, I can easily change to another approach," "I like to experiment with different sales approaches," "I am very flexible in the selling approach I use," and "I can easily use a wide variety of selling approaches." Cronbach's *alpha* for the four-item ADAPTS-SV measure was .89.

Motivation to contact clients. PSR motivation was measured using five, bi-polar, seven-step scales modeled on the instrument previously developed by Richmond (1990). The items for the measure include: motivated-unmotivated, excited-bored, uninterested-interested, involved-uninvolved, and dreading it-looking forward to it. Cronbach's *alpha* for the scale as used in this study was .90.

Sales performance. Pharmaceutical representatives' perceptions of their individual sales performance were assessed by their responses on two scales. A variation of the cognitive learning measure developed by Richmond, McCroskey, Kearney, and Plax (1987) was used for this study. The adapted sales performance measure asked the pharmaceutical sales representatives to indicate (on a scale of 0-9) how well they have sold this past year (scale number one) and how much they believed they could have sold as compared to others in the company had they "had the ideal situation, more resources, and optimum time with clients" (scale number two). A "sales loss" score was computed by subtracting the score of the first scale from the score on the second scale. Since higher scores on this measure indicate more perceived "sales loss" as a function of less than ideal selling conditions, a positive correlation between this score and the PSR characteristics and performance outcomes examined indicates a *negative* relationship.

Results

Data Analyses

Preliminary assessment of the findings involved computation of the means, standard deviations, and reliabilities for the research measures employed. This descriptive data appears in Table 1. Answering H1-H4 required the calculation of simple Pearson correlations. In order to answer RQ1 and RQ2, a median split analysis was initiated by creating two levels (high and low) on the PSR Machiavellianism measure (*Mdn* = 20.00). Twenty-seven PSRs were subsequently classified as high Machiavellian (*M* = 30.04) and 28 low Machiavellian (*M* = 16.32). Research questions one and two were examined by employing t-tests. Two multiple correlation analyses were computed to determine the extent to which PSR nonverbal immediacy, caring, competence, responsiveness, physical attractiveness, Machiavellianism, humor, and motivation were predictors of sales performance (RQ3) and adaptive selling (RQ4). *Alpha* was set at .05 for all

tests of significance.

Table 1: Simple Statistics for Measures

Measure	Mean	SD	Reliability	Possible Range	Obtained Range
Nonverbal Immediacy	49.73	10.86	.91	26-130	84-128
Caring	35.44	4.61	.85	6-42	19-42
Competence	35.82	3.12	.79	6-42	28-42
Responsiveness	56.69	6.54	.90	10-70	31-70
Phy Attractiveness	21.22	3.42	.88	6-30	11-29
PSR Machiavellianism	23.05	8.06	.82	10-70	10-42
Low Machs (N = 28)	16.32	2.55	-	-	-
High Machs (N = 27)	30.04	5.37	-	-	-
Humor	60.04	10.98	.95	16-80	32-78
Motivation	29.20	3.56	.90	5-35	21-35
Adaptive Selling	21.75	3.94	.89	5-35	10-28
Sales Loss	1.13	1.22	NA	0-9	- 2-4

H1 predicted that PSRs' nonverbal immediacy would be positively related to adaptive selling. This hypothesis was supported. The correlation of PSR nonverbal immediacy with adaptive selling was r = .42 (p < .001). See Table 2 for the complete correlation matrix.

Table 2: Correlations Among all Variables

	2	3	4	5	6	7	8	9	10
1. NV Immediacy	.42*	.34**	.43*	.28***	.19	.01	.07	.24	-.23
2. Adapt. Selling	-	.24	.35**	.47*	.21	-.08	.13	.15	.07
3. Phy Attract	-	-	.33**	.04	-.12	.38***	.27***	.12	-.25
4. Competence	-	-	-	.40*	.12	-.18	.00	.38**	.08
5. Caring	-	-	-	-	.62*	-.56*	-.21	.44*	-.17
6. Responsive	-	-	-	-	-	-.49*	.09	.20	-.21
7. Mach	-	-	-	-	-	-	.23***	-.24	-.29***
8. Humor	-	-	-	-	-	-	-	-.17	-.14
9. Motivation	-	-	-	-	-	-	-	-	-.29***
10. Sales Loss	-	-	-	-	-	-	-	-	-

*p <.001, **p <.01, ***p < .05

H2 stated that PSRs' physical attractiveness is positively related to nonverbal immediacy. The results also supported this hypothesis. The correlation of PSRs' self-reported physical attractiveness and nonverbal immediacy was r = .34 (p < .02).

H3 predicted that PSRs' competence would be positively related to nonverbal immediacy, physical attractiveness, adaptive selling, and motivation. This hypothesis was supported in entirety. PSRs' competence was positively and significantly related to nonverbal immediacy ($r = .43$, $p < .001$), physical attractiveness ($r = .34$, $p < .02$), adaptive selling ($r = .35$, $p < .01$), and motivation ($r = .38$, $p < .004$).

H4 stated that PSRs' Machiavellianism would be positively related to humor use. This hypothesis received mild support. The correlation of PSR Machiavellianism with humor was $r = .23$ ($p < .05$).

RQ1 asked whether low or high Machiavellian PSRs self-reported more nonverbal immediacy. The t-test for nonverbal immediacy was not significant [t (1, 53) = -.58, $p > .05$]. High Machiavellian PSRs ($M = 48.85$, $SD = 10.02$) did not self-report significantly more nonverbal immediacy than the low Machiavellian PSRs ($M = 50.57$, $SD = 11.73$).

RQ2 asked whether low or high Machiavellian PSRs self-reported more caring. The t-test for caring orientation was significant [t (1, 53) = 3.78, $p < .0001$]. Low Machiavellian PSRs ($M = 37.50$, $SD = 3.69$) did self-report significantly more caring than the high Machiavellian PSRs ($M = 33.30$, $SD = 4.54$).

RQ3 and RQ4 asked about the extent to which the PSR characteristics (nonverbal immediacy, caring, responsiveness, Machiavellianism, humor, physical attractiveness, competence, and motivation) predict sales performance and adaptive selling, respectively. Collectively, the eight variables predict approximately 43 percent the variance in sales performance and 40 percent of the variance in adaptive selling.

Discussion

The present study was conducted to explore the relationships between pharmaceutical sales representatives' characteristics, sales performance, and adaptive selling. These variables were selected because of their centrality to communication objectives within a specific sales context. With such a limited amount of time on most sales calls, these PSR characteristics are believed to play a crucial role in interactions between PSRs and physicians. This investigation demonstrated that PSR nonverbal immediacy has significant, positive relationships with physical attractiveness, caring, competence, adaptive selling, and motivation. Low Machiavellian PSRs self-report a similar amount of nonverbal immediacy as the high Machiavellian PSRs. Collectively, the PSR characteristics predicted substantial amounts of variance in both sales performance and adaptive selling.

Impression management theory and ingratiation theory provided useful frameworks for investigating the influence of PSR communicator orientations and behavior in relation to adaptiveness and sales performance. Barbuto and Moss (2006) recently conducted a meta-analysis to assess dispositional antecedents of intra-organizational tactics employed. Self-reported measures of impression management and Machiavellianism were strongly related to exchange tactics and assertiveness, revealing a profile of goal-oriented individuals and their use of social influence. Sales representatives may be more likely to use ingratiation, which represents "a broad set of assertive strategies, purposely used to gain the approval of others who control rewards" (Strutton, Pelton, & Lumpkin, 1995, p. 35). If skillfully employed by salespersons, these ingratiatory strategies help to build relationships, enhance interpersonal trust with buyers, and heighten one's personal attractiveness (Giacalone & Rosenfeld, 1990; Strutton, et al., 1995). Ingratiation is a subtle and potentially manipulative way to use communication to

influence others.

H1 contended that PSRs' nonverbal immediacy was positively related to adaptive selling. The first hypothesis was supported. The obtained correlation of PSR nonverbal immediacy with adaptive selling was $r = .42$. PSR nonverbal immediacy may represent the ability to first gain access to the physician followed by the ability to adjust to the individual physician and the specific communication interaction taking place. Given the strength of the correlation, PSRs are likely producing appropriate nonverbal immediacy cues needed to achieve their instrumental and interpersonal goals. The moderate correlation also suggests that excessive/overly immediate PSRs may be ineffectual in their attempts to persuade their clientele. Being perceptive to when the most opportune time is to approach a physician may be paramount to sales success.

H2 stated that PSRs' self-reported physical attractiveness was positively related to nonverbal immediacy. This hypothesis was also confirmed. PSRs' physical attractiveness and nonverbal immediacy were positively and significantly related ($r = .34$). This finding indicates that PSRs are, at the least, social manipulators, lending additional support for Goffman's theory of impression management. Previous research has found physically attractive individuals to be perceived as having stronger personalities (Dion et al., 1972) and more qualified as job applicants (Dipboye, Arvey, & Tepstra, 1977; Seiter & Sandry, 2003). Future research should explore biological sex differences and cross-sex PSR-physician interaction. Perhaps female PSRs have an advantage over male PSRs given the impact of physical attractiveness in the sales context and the fact that, traditionally, more medical doctors are male (Gordon & Nelson, 2005). Attractive females have been found to be more successful than their unattractive counterparts in influence attempts directed toward peers of the opposite sex (Dion & Stein, 1978).

H3 predicted that PSRs' competence would be positively related to nonverbal immediacy, physical attractiveness, adaptive selling, and motivation. This hypothesis was supported in its entirety. PSRs' competence was positively and significantly related to nonverbal immediacy ($r = .43$) physical attractiveness ($r = .34$), adaptive selling ($r = .35$), and motivation ($r = .38$). It is important to remember that not all salespersons are effective communicators. PSRs make conscious choices in terms of their approach to each and every selling opportunity. The specific relationships observed here indicate that competent salespeople are nonverbally immediate, moderately attractive, have the ability to modify or tailor messages accordingly, and are motivated to sell.

H4 predicted that PSRs' Machiavellianism would be positively related to humor use. This hypothesis received only mild support. The correlation of PSR Machiavellianism with humor was $r = .23$. The relationship between these variables may be more complex than the hypothesis presumed. The emergence of either the Machiavellian trait or humor orientation may be triggered depending on the combination of personalities of the PSR and physician, the history of the relationship, and the unique characteristics of the selling situation. Humor is a means to create positive interpersonal affect (Bless & Schwarz, 1999; Kuiper, McKenzie, & Belanger, 1995; Moran, 1996). In that sense, humor may serve as more of a peripheral cue (Petty & Cacioppo, 1986). If a PSR believes that their argument for the product is weak, he or she may engage in humor with the physician to increase liking and as a means of manipulating the information presented.

RQ1 asked whether low or high Machiavellian PSRs self-reported more nonverbal immediacy. Low Machiavellian PSRs did not self-report anymore nonverbal immediacy than

the high Machiavellian PSRs. Previous research has found individuals who perceive deception as a common and necessary element in one's communication repertoire, were seen as more friendly and attentive (O'Hair, Cody, Goss, & Krayer, 1988). Nonverbally immediate behaviors indicating friendliness and attentiveness including eye contact and smiling would seem critical in producing positive perceptions (regardless if the intention were truly genuine or not). High Machs deny cheating for longer periods of time and maintain more eye contact with an accuser than do low Machs (Exline, Thibaut, Hickey, & Gumpert, 1970). Extant research also finds that participants, who engage in sanctioned, prepared lies, exhibit higher affirmative head-nodding rates and lower body adaptor rates than truth tellers (O'Hair, Cody, & McLaughlin, 1981). Thus, high PRSs, despite being stereotyped as more interpersonally detached, are likely to recognize the impact that nonverbal communication has on others' perceptions and hence, attempt to be as nonverbally immediate as low Machs.

RQ2 asked whether low or high Machiavellian PSRs self-reported more caring. Low Machiavellian PSRs self-reported significantly more caring than the high Machiavellian PSRs. This is not a surprising finding given that high Machs tend to be less personally committed to others (Mudrack & Mason, 1995). However, it is important to remember that people who use communication to manipulate others may be, and often are, very successful. Some of these people have high morals, others do not--but they are both highly effective unless the receivers *perceive* them to be manipulating con-artists--then it works against the high Machs. Perceptions of manipulation reflect poorly on the influence agent (Cody, McLaughlin, & Schneider, 1981). Teven, McCroskey, and Richmond (2006), who recently discovered strong, *negative* relationships between perceptions of Machiavellianism, nonverbal immediacy, and responsiveness, assert that the low Machs who employ more responsive and nonverbally immediate behaviors may be perceived as less genuine whereas the exceptionally gifted high Machs are *less* likely to be perceived as manipulators. In everyday interactions, people observe and attribute meaning to the behavior of others, sometimes erroneously. Geis and Moon (1981) observed that high Machs were able to lie more believably in the eyes of judges than were low Machs. In this light, it may *not* be the level of Machiavellianism that makes the difference in sales--it is the communication of positive traits and, more importantly, the various *perceptions* of that communication behavior which makes the critical difference. In this case, perception is far more important than reality.

RQ3 was concerned with the extent to which the PSR characteristics would predict unique variance in sales performance. Collectively, the PSR characteristics predicted approximately one half of the variance in sales performance. This finding reflects the critical role of PSR behavioral characteristics directed at social influence which may, in turn, mediate the potential success of sales transactions. A PSR's behaviors, such as nonverbal immediacy, likely lead to a receiver's perceptions of source credibility, which in turn, make that receiver more susceptible to a PSR's influence. The degree to which a buyer finds a PSR credible affects how they perceive that salesperson's ideas, products, and services. At the present time, this critical assumption remains specifically untested.

RQ4 was concerned with the extent to which the PSR characteristics would predict unique variance in adaptive selling. Collectively, the PSR characteristics predicted approximately 40 percent of the variance in adaptive selling. This finding underscores the importance of these characteristics in the adapting of messages to the intended targets of

persuasion. Successful PSRs are problem solvers. They demonstrate that their company's products represent viable solutions to their clients' needs. Effective PSRs carefully listen to physicians' descriptions of their patient's conditions and tailor their influence messages, both verbal and nonverbal, accordingly.

Clearly, the results of this research reflect the critical role of PSRs' communication behaviors in the context of social influence. Although the present study did not include both members of the sales dyad, it served to identify some the ways that PSRs in organizations use their influence. Accordingly, those individuals interested in pharmaceutical sales stand to benefit from knowing the types of behaviors that have the potential to determine success at sales. This awareness will have considerable value and implications for sales behavior and pharmaceutical representative training programs. From these results, it appears that PSR nonverbal immediacy, caring, responsiveness, Machiavellianism, humor, physical attractiveness, competence, and motivation predict sales performance and adaptive selling. The investigation is also significant in helping to reveal the relationship between PSR Machiavellian tendencies and communication orientations.

Limitations and Directions for Future Research

While the study yielded interesting results, it is not without limitations. The first limitation of this study is the small sample size. A total of 55 pharmaceutical sales representatives in the state of Texas may not be representative of all PSRs employed in the United States. The second limitation lies in the social desirability of the self-report credibility measures in addition to the Machiavellianism measure. Because the data were gathered using self-report ratings rather than reports from observers, the results should be interpreted with caution. Specifically, it is important to avoid treating scores on the Mach instrument as measuring actual Machiavellianism. We may be dealing with a case of what is *self-reported* and what actually *exists* may be substantially different phenomena. As a case in point, the scores on the Mach measure appear to suffer from range restriction. Some may question the validity of self-reports of selling ability and performance. Specifically, are the responses that the PSRs provided on the surveys a valid measure of how they actually communicate on the job? For her recently completed dissertation, Zhong (2001) discovered that both self- and objective assessments of selling ability for PSRs were highly correlated, indicating that self-reported performance reflects actual quota attainment. Ideally, both members of the sales dyad should be studied. Given the pharmaceutical companies' reluctance to provide confidential data, the self-report method may be the best researchers can do for now. If possible, field studies and observations of actual interactions between PSRs and physicians may help capture a richer perspective on social influence within this sales dyad.

Future research is needed to identify specific PSR characteristics, traits, and behaviors that enhance their interactions with physicians. For instance, variables such as affinity-seeking, rhetorical sensitivity, behavior alteration, conversational control, and conflict management techniques may also impact PSRs' sales performance. With such a limited amount of time on most sales calls, conversational control may be a key factor in keeping the customer on track while also addressing his/her needs. This is an area in which high Mach PSRs may have a distinct advantage over low Machiavellian PSRs. Certain personality traits which can be tested and applied to the pharmaceutical sales context might include: argumentativeness, competitiveness, interaction involvement, and dominance. These same traits should be explored

with regard to their relationships with PSR job satisfaction and trait and state motivation. Finally, while obtaining survey data from other sources such as the physicians and pharmaceutical companies may be difficult, triangulating the results with those of the PSR self-reports would offer a more complete, and perhaps more objective picture of PSR social influence and performance.

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