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A Symbolic Interaction Approach to Cigarette Smoking: Smoking Frequency and the Desire to Quit Smoking

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Abstract

This study applies a symbolic interaction perspective to the investigation of smoking frequency and a person's desire to quit smoking cigarettes. Data derived from 485 Atlanta area adult smokers provide a diverse, community-based sample of married and single men and women, aged 18 to 70 years old with a range of income, education, and occupational experiences. Multiple regression was used to analyze the data in order to explore the influence of social demographic characteristics, social interaction, subjective assessments of health, self conceptions, and smoker identity on smoking frequency and quitting smoking. Findings include: (1) the relationship with a non-smoker and hiding smoking negatively impacted smoking frequency, while perceiving positive consequences from smoking has a positive effect on smoking frequency; and (2) perceiving positive consequences of smoking was negatively related to the desire to quit smoking, while a negative smoker identity has a positive influence on the desire to quit. Taken as a whole, the symbolic interaction-inspired variables exerted strong and independent effects on both smoking frequency and quitting smoking. Future smoking interventions should focus on meanings and perceived consequences of smoking in general, and on the smoker identity in the development of campaigns to encourage quitting cigarette smoking.

Cigarette smoking and its health consequences have become widely acknowledged as the leading cause of preventable death among adults in the United States (Centers for Disease Control and Prevention 2008). After a decade long decline and a recent plateau in smoking prevalence, preliminary data from the National Health Interview Survey (NHIS) show an increase from 19.7% to 20.8% between 2007 and 2008 (CDC 2008). Cigarette smoking in the United States causes serious illness among an estimated 8.6 million people, costs \$167 billion in annual health-related losses, kills appropriately 438,000 Americans each year, and results in around 5 million deaths worldwide (Frieden and Blakeman 2005). Media campaigns, smoking restriction legislation and tobacco taxation are among policies implemented as means to reduce cigarette smoking rates. It seems that in addition to these policy efforts to discourage the initiation of smoking, there is a continued need for programs that assist people to cut down or cease smoking. More than half of the Americans who have ever smoked have already quit (Frieden and Blakeman 2005); and a national study found

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that 90% of ex-smokers report quitting on their own without formal help (Lichtenstein and Glasgow 1992). On the other hand, many cigarette smokers who attempt to quit are unable to do so for extended periods of time. Of the roughly 17 million smokers who annually undertake a serious attempt to quit smoking, only about 1.3 million succeed and sustain abstinence (Kenford et al. 2002).

Therefore, it is not surprising that cigarette smoking has been a critical public health issue throughout the second half of the 20th century. The publication of the Surgeon General's Report on Smoking and Health (HHS 1964) is viewed as a key landmark document and triggered extensive scientific research, policy making, and public debates. Epidemiologists carefully tracked the prevalence of cigarette smoking in the United States and social demographic characteristics of smokers and found that current smokers were most likely to be male, in their mid-forties or younger, white or African American, least educated, and poor (CDC 2006). Unlike other forms of drug use which typically begin in adolescence, peak in young adulthood and decline by the mid-20s, cigarette smoking does not show a statistically significant decline from young adulthood to adulthood (Chassin et al. 2000), with very little new smoking initiation after the age of 21 (Chassin et al. 1996). An emerging literature has focused on the influence of social demographic characteristics, including variations in age, occupational status and social class, education, income, and race/ethnicity on smoking frequency and cessation (Barbeau, Krieger, and Soobader 2004, Isaac and Schroeder, 2004, Kandel et al. 2004). There have also been studies that have applied a social ecological framework that explores social contexts, including interpersonal, organizational, neighborhood, and societal factors that may influence smoking behaviors (Ahern, Hubbard, and Syme 2000, Poland et al. 2006).

Another research direction has explored individual-level factors and psychological processes such as the implications of physical dependence on smoking relapses (Kenford et al. 2002), the relationship between alcohol consumption and smoking patterns (McClure et al. 2002), and the influence of negative affective status and depression on smoking (Wetter et al. 2000). More recently, psychological research has explored the ways that smokers rationalize their smoking and develop self-exempting beliefs about smoking (Oakes, et al. 2004); the meaning of smoking including cigarettes as a symbol of control and as a means of self-medicating illness (Lawn, Pols, and Barber 2002); and the self-images and ideal images of smokers (Amos, Currie, and Elton 1997).

From a sociological perspective, in general, and a social psychological perspective, in specific, a major weakness of past studies of cigarette smoking has been the absence of a comprehensive perspective that integrates both social background and social interactional factors with individual-level and self concept factors. A more complete understanding of the dynamics of smoking requires recognizing both the social background and interactional context that may encourage (or inhibits) smoking and the personal and social psychological meanings that motivate (or discourage) smoking.

We propose to address this weakness of past smoking studies by applying symbolic interaction theory (Blumer 1969, Stryker 1980) to enable us to better understand frequency of cigarette smoking and the intention to quit smoking. Three sets of underlying assumptions of symbolic interaction theory provide the foundation of our study. First, as a sociological theory, symbolic interaction theory recognizes that both variations in age, class, ethnicity, and other structural elements create different economic and social opportunities and constraints on the behavior of individuals; and variations in social interactions and network ties create additional social motives for behaviors (Stryker 1980). Thus, in line with past demographic studies, a symbolic interaction approach recognizes that there may be age, gender, and educational and occupational variations in smoking behaviors. In addition,

social network ties with smokers, significant others who smoke, and a willingness to conceal smoking from disapproving others also influences smoking frequency and plans to quit smoking. Second, symbolic interaction theory assumes that individuals experience the world indirectly through their shared social meanings, and social meanings influence behaviors (Blumer 1969, Zerubavel 1997). For cigarette smokers, this implies that their understanding of the anticipated consequences of their smoking influences their smoking behaviors. Third, it is assumed that individuals are motivated to maintain their self conceptions and identity meanings (Burke 2004). Thus, smoking is not just a result of social opportunities or peer pressure, but also the desire of a person to maintain a general sense of self regard or self-worth as well as a specific identity as a smoker.

While symbolic interaction theory has been used to study a variety of socially approved and stigmatized identities from identities as workers, women, and Americans to identities as homeless, drug users and drug dealers to identities as physically disabled (Goffman 1963, Lee and Craft 2002, Owens 2003), the theory has not been invoked to explore the smoker identity or smoking behaviors. One of our goals is to extend the scope of symbolic interaction theory by applying the theory to a new identity (smoker identity), sets of behaviors (smoking frequency), and anticipated plans (quitting smoking). To empirically pursue our investigation, we studied 485 Atlanta area adult smokers to provide a diverse, community-based sample of married and single men and women, aged 18 to 70 years old with a range of income, education, and occupational experiences. Multiple regression will be used to analyze the data in order to explore the relationship of a set of social demographic and social interaction factors, subjective assessments of smoking variables, self conceptions and the smoker identity to smoking frequency and quitting smoking. We also are interested in using our theoretical foundation and empirical study to suggest a new direction for both better understanding smoking behavior and the programmatic implications of smoking meanings, self concept, and smoker identity for prevention and intervention programs.

THEORETICAL PERSPECTIVE AND RESEARCH EXPECTATIONS

Symbolic interaction theory as a comprehensive sociological theory recognizes that both social structural and personal factors influence behavior (Anderson 1994). Individuals are influenced in their thoughts and actions by social forces and processes, shared meanings and symbols, and by individual agency and self motives (Mead 1934).

Social background and interactional factors

A key assumption of symbolic interaction theory is that individuals are influenced by both macro-level social institutions, organizations, and social structures and by intermediate, meso-level social settings where definitions of the situation are negotiated (LaRossa and Reitzes 1993). Stryker (1980) argued that social structure provides the opportunities and social, economic, and cultural resources that lead to patterned regularities in behavior. He noted (1980:70) in particular, the significance of age, class, and ethnicity, as social structural factors. Epidemiological and public health research has focused on similar factors. Findings suggest that cigarette consumption increases with age, at least up until middle age, that men smoke more than women, whites more than members of racial/ethnic minority groups, and people with a low socio-economic status more than those who are more affluent (Barbeau et al. 2004, Isaacs and Schroeder 2004, Kandel et al. 2004). Serving in the military has been associated with higher rates of smoking compared to the civilian population (Klevens et al. 1995). Being married may provide the social integration and ties that discourage risky behaviors, including smoking (Gibbons and Gerrard 1995). We expect that sets of these factors will influence both smoking frequency and plans to quit smoking.

Goffman (1959) focused on patterned regularities in social encounters and smaller settings. He proposed that individuals actively negotiate with others and within the broader context of the shared social meanings and expectations of roles and behaviors in social settings. In the interactional context of smoking, ties with a significant other who smokes would influence both the opportunities to smoke and the extent to which smoking is perceived as an inappropriate behavior. While a significant other is a person to whom the individual attributes importance and therefore may influence behavior (Rosenberg 1979), individuals are also influenced by the scope or breadth of social networks. In this case of smoking, the more friends that a person has who smoke, the more likely peer-acceptance and the greater opportunities to smoke will increase smoking frequency. Finally, Goffman (1959) notes that an important interactional strategy is to selectively engage in self presentation to preserve and protect one's self-esteem and the positive regard of significant others. In the context of smoking, self presentation would include hiding smoking from significant others who disapprove of the behavior. We expect that having a significant other who smokes, more friends who smoke, and hiding smoking from others that disapprove of smoking are all interactional strategies that would increase smoking frequency and discourage plans to quit smoking.

Smoking meanings and perceived consequences of smoking

One of the most important insights of symbolic interaction theory, as stated by Herbert Blumer (1969:5) is that, "human beings act toward things on the basis of the meanings that the things have for them." While acknowledging that behavior is influenced by a host of unconscious, biogenetic, socio-cultural, and economic sources, symbolic interactionists recognize that individuals are also influenced by the meanings they assign to objects and actions. In short, meanings matter. Zerubavel (1997) argued that cognitive processes, including symbolization, provide taken-for-granted assumptions about transition and change, and that they enable individuals to organize their social world into continuous and discrete units of time and space. In other words, cigarette smoking is assumed to be influenced by the cognitive and affective meanings that define and shape the way a person understands what it means to engage in the act of smoking.

Oakes et al. (2004) introduced a very suggestive line of inquiry when they explored the rationalizations used by smokers to explain and justify their continued smoking. They identified four sets of self-exempting beliefs: (1) smokers think they have some personal immunity to the health effects of smoking, (2) smokers do not believe the medical evidence about smoking and disease, (3) smoking dangers are normal and that life generally is risky and dangerous, and (4) the joy and satisfaction of smoking is worth the risk. Hence, there is a set of meanings and beliefs that provide the interpretive context and cognitive frame of reference for defining smoking as a positive behavior. For example, smokers may believe that smoking is affectively desirable and enhances social interactions by increasing their instrumental competence. Such meanings highlight the short-term satisfaction of smoking, while implicitly distancing the immediate act of smoking from its future health risks. Conversely, cognitively linking smoking with health concerns and negative physical feelings may at also influence smoking behaviors and plans. Therefore, we expect that highlighting the positive consequences of smoking will increase smoking frequency and reduce interest in quitting smoking, while recognizing health concerns and negative physical feeling with smoking may reduce smoking behaviors and encourage plans to quit smoking.

Self conceptions and the smoker identity

Another hallmark of symbolic interaction theory is its recognition, derived from seminal works by George Herbert Mead (1934) and Charles Horton Cooley (1902), that individuals are not born with a sense of self. Self conceptions are developed through social interaction,

and once formed, provide individuals with an intrinsic, independent, self-derived motives for behavior and action. Both global or general self conceptions and more specific or situated self meanings, i.e., identities, have been articulated in symbolic interaction theory (Owens 2003). Beginning with the former, “self” refers to shared meanings about a person as a social object (Burke 2004). Symbolic interaction theory proposes that individuals are motivated, in part, to preserve, protect, and enhance their self conceptions (Gecas and Burke 1995).

Over the course of the last twenty-five years, two self-motives, self-esteem and self-efficacy, have received the most attention by symbolic interactions (Stets and Burke 2003). Self-esteem is a global self conception that focuses on a sense of self-worth, a positive self-assessment or evaluation. An extensive research literature reveals that self-esteem is a strong motive that encourages individuals to strive to achieve approval and acceptance from others, especially valued or significant others (Rosenberg 1979, Gecas and Burke 1995). Self-efficacy is a second global self conception that refers to a desire to view oneself as a causal agent, as competent, and as effectively potent (Gecas 1986). As a motive, self-efficacy provides an intrinsic or self derived desire that encourages individuals to succeed in social roles and situations (Gecas and Burke 1995).

Self-esteem and self-efficacy are two global self conceptions that may influence smoking behaviors and plans. Individuals with higher and more positive self-esteem may perceive cigarette smoking and its negative connotation as inconsistent with their desire to maintain and enhance their sense of self-worth. Thus, self-esteem may reduce smoking frequency by tempering the short-term desires to smoke with long-term motives to view oneself in a positive manner. In addition, high self-esteem may motivate smokers to consider quitting smoking. The impact of efficacy on smoking frequency is less clear. On one hand, similar to self-esteem, self-efficacy may discourage smoking. Smoking may be viewed as a form of dependency, and a desire for self control and mastery may encourage smokers to break the habit and quit smoking. On the other hand, Lawn et al. (2002) found that for smokers, cigarettes provided a sense of safety, reassurance, and predictability, thus, the desire to increase self-efficacy may encourage smoking and discourage interest in quitting.

Symbolic interaction theory maintains that individuals do not just create a general sense of self but also create identities, self meanings in social roles (Stryker 1980). Thus, symbolic interaction theory proposes that individuals create a sense of self or personhood in their roles and the desire to maintain these situated self meanings is an independent motive that encourages consistent and supporting behaviors. Most identity theory and research has focused on positive identities, social valued identities such as parental identities, work and occupational identities, and identities in volunteer organizations and institutions (Burke 2004). However, Goffman (1963) in his classic study introduced the notion of stigma and stigmatized identities to cover self meaning in deviant occupations and roles. One of his insights was that a stigma is not an attribute in and of itself, but a shared social meaning, an identity, that emerges in contrast and comparison to the normative and being “normal” (Kaufman and Johnson 2004). Goffman cautioned that a person labeled as stigmatized in one role or situation may be viewed as normal in other situations. Thus, cigarette smokers may be stigmatized when they are seen smoking or when someone smells tobacco on their clothes, but not in other situations. Cigarette smokers may engage in strategies to minimize the negative repercussion of a stigmatized identity such as secrecy, concealing their smoking from others, withdrawal, avoiding interactions with non-smokers and seeking out contact with smokers, or “preventive telling” (Lee and Craft 2002). Indeed, the disapproval of smoking by family and friends has demonstrated associations with smoker-related stigma among smokers and former smokers (Stuber et al. 2008).

Goffman's perspective on stigma also suggests that the more negatively a person views him/herself as a smoker, the more the stigmatized identity will prevent the initiation of smoking, and among those who smoke, encourage them to quit. Stuber et al. (2008) provided support for the link between negative views of self and a stigmatized identity by finding an association between a belief among smokers and former smokers that weak character is a cause of smoking and smoker-related stigma. However, we need to be aware that cigarette smoking may not necessarily lead to a lowered sense of self-esteem and self-worth. In other words, stigma or spoiled identities may be managed.

DATA AND METHODS

Data

The data presented in this study were collected in Atlanta, Georgia between September 2004 and July 2007 as part of the Persistent Smokers Project (PSP), a five-year cross-sectional study among current cigarette smokers with the aim to gain a better understanding of their reasons for and meanings attached to cigarette smoking. Ultimately, such findings are essential to the development of targeted risk reduction interventions. We note that it is a community-based sample, as opposed to the more common samples derived from clinical and other institutional settings. To be eligible, the participants had to be 18 years or older, reside in the Atlanta metropolitan area, have smoked at least 100 cigarettes in their lifetime (which is consistent with the National Health Interview Survey (NHIS) classification (CDC 2002) as "ever smoked") and currently have smoked in the last week (which is consistent with the NHIS classification (CDC 2002) as "current smoker"). Participant recruitment involved purposive sampling. Using a short form, actively recruited potential study participants were screened in the setting where they were recruited, such as near office buildings or other work locations, at restaurants and other social entertainment settings, in parks, and in other public settings. Passive recruitment involved posting flyers in local venues such as stores, restaurants, and community centers. Interested individuals, who called the project phone line listed on the flyers, initially were screened over the phone using the same short form as used in the active recruitment. Two-thirds of the respondents were actively recruited into the study, with the remaining one-third being identified through passive recruitment. We did not identify any significant difference in the sample characteristics based on the recruitment strategy. Once a person was identified as eligible, the staff member described the study and time required to participate. The most common reason for ineligibility was having smoked an insufficient number of cigarettes to qualify, which included having smoked fewer than 100 cigarettes ever, and not having smoked in the last week prior to the interview. The interviews took place at a mutually convenient location, such as one of the project offices, the respondent's home, a local restaurant or coffee shop, or at community centers. Additional information was provided on the nature of the study, the time required, and the informed consent and other confidentiality procedures. The questionnaire contained items covering the respondent's social demographic characteristics, smoking behaviors, attitudes, and opinions, as well as items about alcohol and other drugs, a health inventory, and self and identity scales. Respondents gave verbal consent prior to participating. Institutional Review Board approval was obtained through Emory University and Georgia State University.

The sample for this analysis included 485 smokers. As reported in Table 1, respondents reported a mean age of 36.40 (SD=12.37). They were 55% white, 45% in a current relationship; 43% were female, and 31% employed in professional or managerial occupations. Respondents had a mean total personal income during the past 30 days of approximately \$2,500 (\$30,000 annually), ranging from \$0 to \$18,000 (\$0 to \$216,000 annually) and for the purpose of data analysis we used the square root of the monthly income. Education ranged from 11 to 18 years of schooling. The sample provided a diverse

cross-section of Atlanta smokers well suited to allow us to explore our research expectations. Compared to national data reported by the Centers for Disease Control and Prevention, the study sample included more women and was slightly more educated. Otherwise, the sample reflected the characteristics of smokers nationally (CDC, 2008).

Variables

In this analysis we are interested in exploring factors that may be related to both current smoking frequency and a person's desire to quit. *Smoking frequency* was derived from an open-ended question that asked respondents, "In an average week, how many cigarettes do you smoke?" Responses range from 20 to 420 cigarettes a week with an average of 104.27, or a few more than 5 packs a week. Our other outcome variable, *Quitting desire*, is a scale based on three items: (1) "How interested are you in quitting smoking?" (responses range from "0" to "10"); (2) How great is your desire to quit smoking in the next year (responses range from "0" to "10"); and (3) "How confident are you that you will quit, and will not be smoking one year from now?" (responses range from "0" to "10") with an alpha reliability score of .82.

Two other factors related to smoking were included in the analysis to control for variation in individual smoking history: the age the participants' first had a cigarette and whether the participants had ever tried to quit smoking. *Age first cigarette* was captured with the question "How old were you when you smoked your first cigarette?" *Ever quit* was assessed using the question "How many times have you seriously tried to quit?" Participants who had never tried to quit were coded as "0" and participants who had tried to quit one or more times were coded as "1".

Seven social demographic variables were included to investigate demographic patterns and socio-economic resources that may be associated with smoking. *Age* was measured with an open-ended question, "How old are you now?" with another question asking about date of birth to verify age. Race was determined by a dichotomous variable, *white*, based on the question, "How would you describe your racial/ethnic background?" *Female* was constructed as a dichotomous variable coded "1" for responses of "female" and "0" for responses of "male." Socio-economic status was estimated with three variables. Respondent's occupation was ascertained from the question "What kind of work do you do?" *Professional/managerial* was constructed as a dichotomous variable with the categories "professional" and "managerial or administrative" coded "1," and other occupations coded as "0." *Income* was derived from a question that asked, "During the past 30 days, about what was your total personal income from work and all other sources?" Due to violations of normality, we used the square root of income in all analyses. Participants were asked if they had ever been in the armed forces. Responses of "no" were coded "0," "yes, in the past" coded "1," and "yes, currently enrolled" were coded "2." No one in our sample reported being currently enrolled. *Current relationship* was based on a question that asked about "your relationship status right now," with "married or common law married," "living with a partner" and participants who reported being in a steady or casual relationship but not residing with the partner coded as "1" and "single," "separated," "divorced," and widowed," coded as "0." *Education* was measured in years of schooling and comes from a question that asks "What is your highest year in school or grade that you completed?" Responses were categorized as "Less than a high school diploma" or "GED," "Graduated from high school" or "Some vocational/technical school certificate," "Some college" or "Two year college degree," "Four year college degree" or "Some graduate school," and "Master's degree" or greater. Relationship status was coded as a dichotomous variable.

Symbolic interaction is interested not only in social background factors, but also interactional factors that may influence behaviors and plan. Therefore, to study smoking

frequency and plans to quit, we also include three variables that tap social ties and interactions. *Partner type* was assessed with the question “Are you currently in a relationship with...” The responses were “A steady partner who smokes”, “A steady partner who does not smoke” and “Not in a steady relationship”. *Hiding smoking from anyone* was measured with the question “Are there people from whom you are hiding your cigarette smoking?” Responses of “no” were coded “0” and “yes” coded “1.” *Friends who smoke* was derived from a question that asked “How many of your friends smoke?” with responses of “None” coded “0,” “Some” coded “1,” “Half” coded “2,” “Most” coded “3,” and “All” coded “4.”

Recognizing that meanings matter, we include three variables to tap differences in the way that respondents understand the health risk of smoking, link smoking with negative physical feelings, and perceived positive consequences of smoking. *Health concerns* was measured using the four questions that make up the Health Risks subscale of the Smoking Consequences Questionnaire (Copeland, Brandon, and Quinn 1995): “Smoking is taking years off my life”, “The more I smoke, the more I risk my health”, “By smoking I risk heart disease and lung cancer”, and “Smoking is hazardous to my health”. The scale demonstrated adequate internal consistency as measured by an alpha reliability score (.82). Response categories ranged from Strongly Agree (5) to Strongly Disagree (1), with higher scores indicating more health concern. *Negative physical feelings* was measured by four questions aimed at ascertaining a person’s perception of smoking on their physical health. Items included “Smoking makes me short of breath”, “Smoking makes me feel physically weaker”, “Smoking makes it hard for me to exercise or to play sports” and “Smoking gives me a cough”. Response categories ranged from Strongly Agree (5) to Strongly Disagree (1) and the alpha reliability score was .79. Higher scores indicate greater negative feelings. *Positive consequences of smoking* contains twelve items adapted, in part, from work by Myers et al. (2003) and Copeland et al. (1995): (1) “When I’m angry, smoking a cigarette calms me down;” (2) “Smoking calms me down when I feel nervous;” (3) “Smoking energizes me;” (4) “Cigarettes can really make me feel good;” (5) “When I am worrying about something, smoking a cigarette is helpful;” (6) “When I’m feeling happy, smoking helps keep that feeling;” (7) “I enjoy parties more when I am smoking;” (8) “I feel more at ease with other people if I have a cigarette;” (9) “It helps in social situations” in response to the statement, “People have given various reasons for why they smoke;” (10) “I am afraid that I will be unable to function if I stop smoking;” (11) “I do better work when I am allowed to smoke;” and (12) “I feel like I am part of a group when I’m around smokers.” Response categories ranged from “Strongly agree” (5) to “Strongly disagree” (1) and the scale alpha reliability score is .80.

Two global self conceptions reflect global self conceptions that may influence smoking frequency and plans to quit smoking. *Self-esteem* is measured with the 10-item self-esteem scale (Rosenberg 1979) which contains statements such as “I feel that I’m a person of worth, at least on an equal plane with others” and “I take a positive attitude toward myself.” Response categories ranged from “Strongly agree” (5) to “Strongly disagree” (1) and the scale’s alpha reliability score is .86. *Self-efficacy* was derived from seven of the original fourteen items found in Scheussler’s Doubt About Self-Determination Scale (Schuessler 1982): (1) “What happens in life is largely a matter of chance;” (2) “I sometimes feel I have little control over the direction my life is taking;” (3) “For me, one day is no different from another;” (4) “The world is too complicated for me to understand;” (5) “The future is too unsure for a person to plan ahead;” (6) “I find it difficult to be optimistic about anything nowadays;” and (7) “I have little influence over things that happen to me” with items recoded from “1” “Strongly agree” to “5” “Strongly disagree” and an alpha score of .75.

Finally, *negative smoker identity* is a new identity measure based on 6 items: (1) “My smoking makes me respect myself less;” (2) “I look ridiculous while smoking;” (3) “I feel

guilty about smoking; (4) “If I was not so weak, I could quit smoking;” (5) “I think people should “bash” smokers;” and (6) “I hate the way I smell after smoking,” with responses from “Strongly agree” to “Strongly disagree” coded or recoded to reflect a negative direction and yielding an alpha reliability score for the scale of .72.

Analysis plan

Past research has extensively explored the addictive consequences of smoking cigarettes (Morrell, Cohen and al’Absi 2008). We therefore are interested in assessing whether the direct relationship between the frequency of smoking and quitting will be reduced when we add social demographic characteristics and interaction variables, meanings and implications smoking factors, and the self conception and identity variables to the analysis.

Following an examination of descriptive statistics and bivariate associations of study variables, we are interested in investigating two research issues. First, to explore whether our symbolic interaction-inspired variables are related to smoking frequency, we begin with an ordinary least-squared (OLS) regression analysis that includes only the social demographic variables that demonstrated bivariate associations with the outcome at the level of $p < .10$. Smoking frequency was square root transformed to meet the OLS assumptions of normality. The next regressions include social interaction, physical health perception, and self conception variables (Models 2, 3 and 4) that demonstrate a trend toward a significant association with smoking frequency. The final analysis (Model 5) added age at first cigarette as an additional control variable.

Next, we are interested in whether our symbolic interaction theory-inspired variables are independently related to the desire to quit smoking using the same analysis strategy of including variables that demonstrate bivariate associations at the level of $p < .10$ in nested multivariate regression analyses. These regression analyses are limited to participants who planned to quit smoking at some point in the future ($N=420$). For empirical and conceptual reasons, people with no intention to quit are excluded from the second regression analyses. Empirically, the participants who did not intend to quit were left out because the question “How confident are you that you will be able to quit” was not asked of those who indicated they did not intend to quit due to a skip pattern. Conceptually, it could not be assumed how a person who did not intend to quit would answer that question. The first OLS regression analysis includes social demographic variables. We then add the other symbolic interaction-inspired variables (Models 2, 3 and 4). Finally, we included smoking related variables (Model 5).

FINDINGS

Descriptions of variable distributions and associations with the outcome variables are presented in Table 1. Nearly 20% of the sample reported being in a relationship with someone who did not smoke and nearly 30% reported hiding smoking from anyone. The majority identified one-half or more of their friends as smokers. The mean score for positive consequences of smoking is 39.00 ($SD=6.63$), and 64% of the respondents had scores above the point midway between the highest and lowest actual scores. The average score for self-esteem is 39.50 ($SD=5.57$), with 80% of respondents reporting self-esteem scores above the midpoint of the observed range of the scale; and self-efficacy reflects an average score of 24.92 ($SD=4.32$), with 70% of respondents scoring above the midpoint of the observed scale range. The mean score for negative smoker identity is 17.32 ($SD=4.24$), with 45% of smokers reporting scores below 17, 9% at 17, and 46% above 17. Relationship with a non-smoker, hiding smoking from anyone, and self-esteem demonstrate negative associations with smoking frequency, and having friends who smoke and perceiving positive consequences of smoking are positively associated with smoking frequency at the level of p

< .10. Self-esteem, self-efficacy, and negative smoker identity are positively associated with a desire to quit, while having friends who smoke and perceiving positive consequences of smoking are negatively associated at the level of $p < .10$. Three cases were determined to be outliers based on responses to the income question (greater than seven standard deviations outside the mean); these were deleted from the analysis. There was minimal missing data on control and study variables and casewise deletion was applied in multivariate analyses.

Examination of bivariate statistics between independent variables confirm the independence and validity of the variables suggested by symbolic interaction theory. As expected, respondents with more friends who smoke and who highlight the positive consequences of smoking smoke more cigarettes and report less of a desire to quit smoking, but these two variables are clearly tapping meanings that are different from each other ($r=.17$). Additionally, having more friends who smoke is negatively associated with being in a relationship with someone who does not smoke ($r=-.11$) and hiding smoking from anyone ($r=-.13$) while positive consequences of smoking is not significantly associated with being in a relationship with someone who does not smoke and was positively associated with hiding smoking from anyone ($r=.09$). Further, there is no statistically significant relationship between positive consequences of smoking and smoker identity and a negative association between friends who smoke and the smoker identity ($r=-.10$). The two self conceptions, self-esteem and self-efficacy are, as expected, moderately correlated with each other, $r=.41$, but clearly not identical constructs; and both variables reflect self meanings that are substantially different from smoker identity, with only self esteem revealing a negative association with negative smoking identity ($r=-.11$). Self-efficacy demonstrates an association with being in a relationship with someone who does not smoke ($r=.10$). Hiding smoking is positively associated with negative smoker identity ($r=.20$). Being in a relationship with someone who does not smoke and hiding smoking from someone are not associated.

Finally, we found that smoking frequency was only modestly correlated, $r=-.15$, with an interest in quitting smoking. The low correlation supports our expectation that smoking frequency and quitting plans are different outcomes and suggests that they may be influenced by different factors. As an aside, we were curious whether people who have smoked longer are more likely to smoke more cigarettes, and found that length of time smoking was almost perfectly correlated with age ($r=.93$), thus age is also a proxy for the number of years that a person has smoked cigarettes, and is positively related to smoking frequency.

Regression analyses of study variables and frequency of smoking are presented in Table 2. Model 1 reveals that a higher frequency of cigarette smoking is reported by older smokers, whites, and those who are professionals and managers. Higher levels of education are associated with a lower frequency of smoking, compared to having a less than a high school education or a GED. Model 2, 3 and 4 add the other variables. The addition of the social interaction, subjective assessments of health, self conceptions and smoker identity nearly doubled the proportion of variance explained in frequency of smoking (R squared of .12 in model 1 to an R squared of .23 in model 4). Beginning with the social interaction variables, being in a relationship with a non-smoker is associated with a decrease in smoking frequency, as is hiding smoking from anyone.

Turning to the subjective assessment variables, negative physical feeling associated with smoking is associated with greater smoking frequency, as is perceiving positive consequences of smoking controlling for the social demographic variables. We next consider the relationship between self conceptions and smoking frequency. The relationship between self-esteem and smoking frequency does not reach statistical significance. Self-

efficacy did not approach significance during bivariate testing and therefore was not included in multiple regression analyses.

Finally, we included age of first cigarette to control for smoking history. Although greater age at the time of first cigarette is associated with a decrease in smoking frequency, the inclusion of this variable did not substantively alter findings related to the theoretical variables.

Our second research interest is to explore factors that may be related to a desire to quit smoking (see Table 3). While smoking frequency deals with current and past influences on the present, a desire to quit smoking focuses on the future, and how the present and past affect intentions and plans for the future. We begin in Model 1 with the social demographic variables to the analysis and reveals that only being white demonstrates a negative association with a desire to quit ($p < .01$).

Models 2, 3 and 4 include rest of the symbolic interaction theory-inspired variables and we find that the proportion of variance that is explained by the equation increased from an R squared of .04 in model 1 to .22 in model 4. Having health concerns about smoking increases plans to quit smoking and conversely, having more friends who smoke and perceptions of the positive consequences of smoking decrease the desire to quit smoking. By far, the strongest relationship is between plans to quit smoking and a negative smoker identity ($\beta = .33$, $p < .001$).

Model 5 controls for the smoking characteristics of having ever quit and smoking frequency and finds that among smokers who reported planning to quit sometime in the future, those who have previously quit reflect more desire to quit smoking. In contrast, smokers who report a higher frequency of smoking tend to reflect less desire to cease smoking. Inclusion of these variables explained an additional 6% of the proportion of variance in desire to quit smoking.

DISCUSSION AND CONCLUSION

In this study, we apply a symbolic interaction perspective to the investigation of smoking frequency and a person's plans to quit smoking cigarettes. We propose that in addition to social demographic characteristics, that social interaction, subjective assessment of health, self conceptions and identities influence the frequency of cigarette smoking and the desire to quit smoking.

Symbolic interaction theory shared with past investigations the recognition that social forces influence smoking behaviors. We found that older smokers tend to smoke more and cigarette smoking is more prevalent among whites, a finding that is consistent with recent population-based surveys (CDC 2002, CDC 2008). Less expected is the positive correlation between being a professional/manager and smoking frequency, and the positive effect of this occupational category on smoking frequency. Past studies reported that professionals are less likely to smoke (Barbeau et al. 2004). In this study, we do not compare smokers to non-smokers, but rather frequency of smoking among smokers. Our findings suggest that professionals smoke more than people from other occupations, which may reflect their greater job pressures and occupation-related stress.

The theory also recognizes while that individuals are influenced by others in social situations, they also selectively choose situations and others that support their behaviors. Both of these processes appear to influence smoking. Being in an intimate relationship with a non-smoker has a negative impact on smoking frequency and hiding smoking from someone may reduce smoking, in part, because hidden places may not always be available.

We expected that smokers manage their stigmatized identity, in part, by selectively interacting with others who also smoke; and found that most smokers create friendship networks with other smokers but that having friends who smoke did not influence smoking frequency. Beyond investigating the impact of being in an intimate relationship with a non-smoker and assessing the number of friends who smoke, future research may benefit by also investigating the impact of additional significant others, such as close personal friends, family members, admired teachers and colleagues. In other words, a more comprehensive set of significant others, whose opinions and regard a smoker truly values, may be helpful in order to better assess the impact of social ties on smoking behaviors and plans.

More than many other perspectives, symbolic interaction theory recognizes that meanings matter. We found that many of our smokers, roughly half, report a score for positive consequences of smoking that was above the median. This suggests that most of these smokers generally do attribute at least some positive outcomes to their smoking, despite all the information about the negative health consequences of smoking. Individuals who perceive more positive consequences from their smoking are more likely to report a higher frequency of smoking and less likely to desire to quit smoking. Thus, attributing positive meanings to smoking not only encourages short term outcomes, such as smoking frequency, but also longer-term consequences, such as not desiring to quit smoking.

Symbolic interaction theory is probably best known for its recognition that self conceptions and identities influence behaviors and plans. The negative smoking identity variable was specially constructed for this study and we found that, far from holding very negative smoker identity meanings, most smokers are moderate in their self assessment as smokers. The smoker identity refers to self meanings associated with engaging in a stigmatized activity and reflects some divergent social processes. On one hand, most people tend to view themselves very positively in their situated identities (Burke 2004). Yet, the mean negative smoker identity score was near the mid-point in the scale. So, unlike non-stigmatized identities, these are moderate self assessments despite increased social disapproval for smoking. Previous research among smokers and former smokers has also demonstrated a lack of association between exposure to smoke-free air laws and perceived smoking-related stigma (Stuber et al. 2008). The next step in this research agenda would be a qualitative study, and interviews with smokers to probe how they manage to protect themselves from negative meanings associated with smoking. Goffman's (1963) general framework and Lee and Craft's (2002) summary of strategies used to minimize the negative repercussions of a stigmatized identity would provide a useful starting point for this investigation.

The smoker identity appears to be independent of friends who smoke and positive consequences of smoking. The finding that the smoker identity is not related to self-efficacy and is only slightly negatively associated with self-esteem also supports the expectation derived from Goffman (1963) that individuals are able to manage their stigmatized identities through a variety of strategies that enable them to preserve and protect their overall self conceptions. Similarly, it is somewhat surprising that the smoker identity is not related to smoking frequency. There does not even appear to be a zero-order correlation between smoking frequency and smoker identity. Negative images of self as a smoker may help non-smokers resist initiating the smoking habit or may be associated with an increase in the desire to stop smoking, but do not appear to discourage the frequency of smoking done by established smokers. In this sense, the smoker identity may influence the decision to smoke or not to smoke, but not the frequency of smoking. The test would be a cross-sectional comparison between smokers, non-smokers, and former smokers on the meaning and identity implications of smoking. Further, a longitudinal study of smoking trajectories and the impact of a smoker identity on becoming (or resisting becoming) a smoker would

provide an even better data set for investigating the impact of the smoker identity on smoking behaviors.

The smoking identity is related to the desire to quit smoking. Quitting would be a consistent consequence of a negative self-image as smoker; and not surprising, the smoking identity is more strongly related to plans to quit than even smoking frequency. Among the other variables, the attribution of positive consequences to smoking and having friends who smoke are negatively related to plans to quit smoking. Additionally, self-esteem and self-efficacy are not significantly associated with the desire to quit smoking in multivariate analyses. One interpretation of the findings is that a desire to maintain and enhance one's sense of self-worth may motivate and encourage giving up an unhealthy and potentially socially-discouraged and stigmatizing behavior, but is not as critical as a negative smoker identity to the desire to quit.

While the frequency of smoking and the desire to quit smoking cigarettes are different processes, positive consequences of smoking is related to each outcome. Future research would benefit by both comparing smokers to non-smokers, in part to investigate whether meaning and identity may distinguish smokers from non-smokers. In addition, longitudinal studies beginning in adolescence would be helpful in discerning the social and identity processes that contribute to the onset of smoking and the establishment of the social and identity supports that maintain smoking.

Finally, future smoking interventions need to focus on the meanings associated with smoking and the consequences of smoking. First, smoking intervention campaigns would benefit by directly challenging the perceived positive consequences of smoking held by many smokers. Questioning whether smoking actually is an effective strategy for reducing stress and creating energy may help undermine the cognitive screens that smokers use to create barriers that reflect messages about the negative health consequences of smoking (Oakes et al. 2004). Second, a promising direction for smoking interventions would be to highlight smoking cessation as a strategy for reducing the negative self meanings associated with being a smoker. A campaign around the theme that quitting would alleviate guilt about smoking or feeling uneasy about being seen smoking by others may make the point. Similarly, quitting smoking may be tied to other salient identities. Appeals that link quitting smoking to being a more effective and successful parent, a more responsible and considerate friend or colleague may highlight the broader identity-supporting consequences of stopping smoking. The key is to demonstrate the identity benefits and rewards of stopping smoking.

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Table 1

Descriptive Statistics and Correlations for Study Variables

	N	Mean/ Proportion	SD	α	Smoking Frequency	Desire to Quit
<i>Socio-demographic characteristics</i>						
Age	482	36.40	12.37		.15**	.09 ⁺
White	482	.55			.23***	-.15**
Female	481	.43			-.04	.05
Professional/Managerial	480	.31			.11*	.01
Income ^a	478	46.19	19.79		.09*	-.03
Ever in armed forces	482	.09			.10*	-.04
Current relationship	482	.45			-.04	-.01
Education (continuous)	482	16.11	2.78		-.06	-.04
Education ^b (by category)	482				3.43**	2.87*
GED or less than high school	48				136.02	17.83
High school grad or some voc	87				99.54	20.92
Voc or some coll or two year	183				95.72	18.07
Four year or some grad	116				107.78	20.06
Graduate degree	48				105.19	17.33
<i>Social interaction</i>						
Partner Type ^c (by category)	473				2.63 ⁺	.14
Relationship with non-smoker	83				90.94	19.10
Relationship with smoker	129				109.51	18.69
No relationship	261				105.41	19.17
Hiding smoking from anyone	482	.29			-.18***	.06
Friends who smoke	480	1.94	1.00		.11*	-.20***
<i>Subjective assessment of health</i>						
Health concerns	479	6.60	2.36	.82	.05	.21***
Negative physical feelings	480	13.64	3.29	.79	.13**	.14**
Positive consequences of smoking	476	39.00	6.63	.80	.18***	-.18***

	N	Mean/ Proportion	SD	α	Smoking Frequency	Desire to Quit
<i>Self Conceptions and Identity</i>						
Self-esteem	481	39.50	5.57	.86	-.12**	.13**
Self-efficacy	481	24.92	4.32	.75	.01	.09 ⁺
Negative smoker identity	478	17.32	4.24	.72	-.04	.37***
<i>Smoking</i>						
Age first cigarette	482	14.75	4.61		-.14**	.04
Ever Quit	475	.81			-.01	.29***
Smoking frequency	482	104.27	69.63			-.15**
Quitting desire	420	18.99	7.94	.82		

^a Square root transformation of monthly income

^b F statistic reported

^c F statistic reported for ANOVA using the square root transformation of smoking frequency. Means reported are those of smoking frequency.

⁺ $p < .10$;

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 2

Regression Models Predicting Smoking Frequency^a with Socio-Demographic Characteristics, Implications for Health, and Symbolic Interaction Variables (N=450)

	Model 1 β (B)	Model 2 β (B)	Model 3 β (B)	Model 4 β (B)	Model 5 β (B)
<i>Socio-demographic characteristics</i>					
Age	.15** (.04)	.14** (.04)	.14** (.04)	.13** (.04)	.14** (.04)
White	.30*** (2.00)	.31*** (2.05)	.29*** (1.89)	.28*** (1.86)	.27*** (1.79)
Professional/managerial	.10 ⁺ (.73)	.12* (.85)	.10* (.75)	.11* (.76)	.10* (.73)
<i>Education (reference category: GED or less than HS)</i>					
High school grad or some voc	-.15* (-1.28)	-.13* (-1.12)	-.13* (-1.12)	-.12 ⁺ (-1.06)	-.12 ⁺ (-.98)
Voc, some college, or two year degree	-.30*** (-2.03)	-.26*** (-1.79)	-.27*** (-1.82)	-.26*** (-1.74)	-.24*** (-1.60)
Four year degree or some grad school	-.26** (-2.00)	-.19** (-1.50)	-.20** (-1.57)	-.19** (-1.50)	-.18* (-1.36)
Graduate degree	-.24*** (-2.71)	-.19** (-2.19)	-.19** (-2.21)	-.19** (-2.16)	-.17** (-1.97)
Income ^a	.01 (.00)	.04 (.01)	.05 (.01)	.06 (.01)	.05 (.01)
Ever in armed forces	.08 ⁺ (.91)	.10* (1.12)	.11* (1.22)	.11* (1.24)	.11* (1.24)
<i>Social interaction</i>					
Relationship with non-smoker ^b		-.14**	-.12**	-.12*	-.13**

	Model 1 β (B)	Model 2 β (B)	Model 3 β (B)	Model 4 β (B)	Model 5 β (B)
Relationship with smoker ^b	(-1.17)	-1.01	(-1.00)	(-1.08)	
					.00
					(.01)
Hiding smoking from anyone					
Friends who smoke					
<i>Subjective assessments of health</i>					
Negative physical feelings					
Positive consequences of smoking					
<i>Self conceptions and identity</i>					
Self-esteem					
<i>Smoking</i>					
Age first cigarette					
Adj R ²	.12	.18	.23	.23	.24

^a Square root transformed

^b Reference group is No Relationship

⁺ p < .10;

^{*} p < .05;

^{**} p < .01;

^{***} p < .001

Table 3

Regression Models Predicting Desire to Quit with Smoking Frequency, Socio-Demographic Variables, Implications for Health, and Symbolic Interaction Variables (N=399)^a

	Model 1 β (B)	Model 2 β (B)	Model 3 β (B)	Model 4 β (B)	Model 5 β (B)
<i>Socio-demographic characteristics</i>					
Age	.04 (.02)	.02 (.01)	.02 (.01)	-.02 (-.01)	-.03 (-.02)
White	-.16** (-2.49)	-.15** (-2.39)	-.20*** (-3.08)	-.17** (-2.70)	-.15** (-2.42)
Education (ref: GED or less than HS)					
High school grad or some voc	.12 (2.40)	.10 (2.13)	.06 (1.15)	.04 (.73)	.04 (.78)
Voc, some college, or two year degree	.02 (.25)	-.01 (-.19)	-.00 (-.04)	-.05 (-.80)	-.05 (-.88)
Four year degree or some grad school	.15+ (2.63)	.09 (1.59)	.10 (1.88)	.05 (.85)	.05 (.81)
Graduate degree	.04 (1.00)	.01 (.24)	-.02 (-.63)	-.02 (-.64)	-.01 (-.33)
<i>Social interaction</i>					
Friends who smoke		-.17** (-1.35)	-.14** (-1.07)	-.10* (-.79)	-.09* (-.73)
<i>Subjective assessments of health</i>					
Health concerns			.20*** (.69)	.10* (.35)	.10* (.33)
Negative physical feelings			.11* (.27)	.03 (.07)	.06 (.14)
Positive consequences of			-.16** (-1.19)	-.16** (-1.19)	-.15** (-1.18)
<i>Self conceptions and identity</i>					

	Model 1	Model 2	Model 3	Model 4	Model 5
	β (B)	β (B)	β (B)	β (B)	β (B)
Self-esteem				.09 ⁺	.05 (.07)
Self-efficacy				.07	.08 (.15)
Negative smoker identity				.33 ^{***}	.29 ^{***} (.58)
<i>Smoking</i>					
Ever quit					.23 ^{***} (5.11)
Smoking frequency ^b					-.11 [*] (-.26)
Adj R ²	.04	.06	.13	.22	.28

^a Analysis excludes participants who indicated that they did not intend to quit smoking.

^b Square root transformed

⁺ p < .10;

^{*} p < .05;

^{**} p < .01;

^{***} p < .001

NOTE: Alternate model was tested with the square root of the outcome variable to ascertain that modest deviations from normality did not substantively impact results.