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Paul Etcheverry
Iowa State University, petch@siu.edu

Christopher Agnew
Purdue University, agnew@purdue.edu

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Similarity in Cigarette Smoking Attracts: A Prospective Study of Romantic Partner Selection by

Own Smoking, Smoker Prototype, and Perceived Approval

Paul E. Etcheverry

Iowa State University

Christopher R. Agnew

Purdue University

The current research employs a multi-wave longitudinal design to examine how young adults' own smoking, smoker prototypes, and perceived partner approval of smoking are associated with selection of romantic partners over time. Results indicate that participants who smoke and have a more positive prototype of the typical smoker are more likely to initiate a romantic relationship with someone who smokes and who has greater perceived approval for smoking. The findings suggest the importance of examining romantic partner factors associated with young adult smoking and suggest some important aspects of selection effects in terms of the target of selection (romantic partners), what is selected for (partner smoking and approval), and key participant variables that contribute to selection (participant's own smoking and smoker prototype).

Keywords: Young adult cigarette smoking, selection effects, romantic partner selection, smoker prototypes, perceived approval for smoking.

Paul E. Etcheverry has moved to Southern Illinois University at Carbondale. Correspondence should be addressed to Paul E. Etcheverry, SIUC/Department of Psychology, Mailcode 6502, 1125 Lincoln Drive, Life Science II, Room 281, Carbondale, IL 62901, e-mail: patet@siu.edu or to Christopher R. Agnew, Department of Psychological Sciences, Purdue University, 703 Third Street, West Lafayette, IN 47907-2081, e-mail: agnew@purdue.edu.

Similarity in Cigarette Smoking Attracts: A Prospective Study of Romantic Partner Selection by

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Many factors contribute to the initiation and continued use of cigarettes over the course of adolescence and into young adulthood. One of the most robust predictors of cigarette use in adolescence and young adulthood is the smoking behavior of peers (Kolbus, 2003; see meta-analysis by Derzon & Lipsey, 1999). Using both cross-sectional and longitudinal designs, a number of studies have demonstrated an association between peer smoking and the smoking of adolescents (e.g., seventh graders; Flay et al., 1994) as well as young adults (e.g., age 19 to 25; Andrews, Tildesley, Hyman, & Li, 2002). Typically, research has focused on general perceptions of peers, specific friends (e.g., best same-sex friend) or a combination of different types of peers (Kolbus, 2003). Although links between peer smoking and own smoking are robust (Kolbus, 2003), why this association occurs is less well understood. Two primary mechanisms have been proposed, selection and influence (Bauman & Ennett, 1994). The current research focuses on selection processes and considers romantic partners as one type of "peer" that has received less explicit consideration in research on young adult cigarette smoking. In addition, smoker prototypes are examined as potential influences on the selection process.

Romantic Partners and Cigarette Use

There are a number of reasons to focus specifically on romantic partnerships as a potential source of influence on health-relevant behavior. As adolescent and young adult romantic relationships develop, they can exert a strong influence on the behavior as well as the opinions and attitudes of those involved in the relationship (Furman & Wehner, 1994). Although early romantic relationships may not always be stable, these relationships are often psychologically very important to an adolescent (Furman, 2002). Even relatively short-term

relationships can have an impact on opinions and behaviors, including cigarette use (Kolbus, 2003). One reason why romantic relationship partners have not commonly been examined in the literature on peer influence is that young adolescents may not be particularly likely to report being in a romantic relationship. However, recent research on young adults suggests that romantic partner smoking and opinions about smoking are associated with cigarette use, above and beyond effects attributable to friends alone (Echeverry & Agnew, 2007).

Although past research has examined the association between own smoking and the smoking of one's relational partner in older (often marital) relationships (e.g., Leonard & Muder, 2003; Lichtenstein, Andrews, Barckley, Akers & Severson, 2002; Ogden, Morgan, Heavner, Davis, & Steichen, 1997; Vink, Willemssen, & Boomsma, 2003), few studies have examined romantic partner associations with smoking in late adolescence and young adulthood. Among extant studies, significant associations have been found between romantic partner behavior and opinions and adolescent and young adult smoking (Stanton, Currie, Oei, & Silva, 1996). Importantly, this association has been found even after controlling for variables associated with the smoking of participants' friends, suggesting that romantic partner variables are uniquely influential predictors (Echeverry & Agnew, 2007).

Selection versus Influence of Close Others

Two primary mechanisms have been proposed to account for the association between peers and smoking, selection and influence (Bauman & Ennett, 1994). Selection refers to those who smoke (or do not smoke) selecting as peers others who smoke (or do not smoke). Influence (or socialization) describes a process in which smoking (or non-smoking) peers influence or guide a person to initiate or increase his or her own smoking (or non-smoking). Numerous studies have examined the role of both selection and influence processes on adolescent substance

use. Some studies have found primarily evidence of selection processes (e.g. Simons-Morton, Chen, Abrams & Haynie, 2004) while others have shown primarily evidence of influence (e.g. Wills and Cleary, 1999). A number of studies have also demonstrated both processes underlying smoking and health behaviors such as alcohol use (Bray, Adams, Getz, & Mcqueen, 2003; Engels, Viano, Blockland, Kemp, & Scholte, 2004; Curran, Stice & Chassin, 1997).

The distinction between these two processes is important because of perceived differences in the relevance to intervention efforts. Influence has clear relevance for the prediction of smoking as well as for the design and implementation of interventions to reduce smoking among adolescents and young adults. In contrast, if selection is found to be the only process operating, it is often held that the role of peers becomes less meaningful as they are considered to be only an outcome, and not a cause, of smoking. Indeed, some researchers have criticized the field for assuming all associations between peer and adolescent smoking are the result of influence and for ignoring selection processes (Bauman & Etnett, 1994). However, we see selection as also important because interventions techniques could readily focus on teaching people not just how to resist the influence of close others but also the importance of not selecting substance-using peers. Past research has not examined whether people select romantic partners so as to support existing cigarette use (or lack of use).

Selection as Relationship Initiation

The scientific literature on interpersonal relationships would characterize "selection" as relationship initiation. That is, a person who chooses to associate with another person, for whatever reason, would be said to initiate a relationship with that person. There is a sizeable literature on factors that lead to relationship initiation, much of it focusing on similarity between relationship partners. Similarity has been found to be an important predictor of liking and desire

for sustained interaction. Within romantic relationships, similarity of attitudes and interests has been found to be associated with relationship stability (Aube & Koestner, 1995). Primarily, measures of similarity have involved attitudes and beliefs (Davis & Rusbul, 2001). However, similarity in behavior should also be associated with the quality and stability of a romantic relationship. Behaviors that are perceived to be potentially health threatening, such as cigarette smoking, may be especially strongly associated with relationship outcomes. Those who do not engage in these behaviors may have negative feelings about initiating a romance with a partner who does. At the same time, someone who smokes may prefer to be romantically involved with someone who engages in the same behavior. The smoker may see their partner's smoking as a sign of similar values and beliefs or a sign of acceptance of his or her own behavior. A relationship where both partners engage in similar behaviors is more likely to experience mutually desired outcomes, such as increased relationship quality and stability.

Romantic partners, like peers, can act to support one's preexisting health behaviors. For example, in one study of newlywed couples, a husband's alcohol use at the beginning of the marriage was associated with the wife's alcohol use a year later (Leonard, & Mudar, 2003). In another recent study of first year college students, romantic partner smoking and partner approval for smoking were associated with participant cigarette use, even when controlling for prior participant smoking (Ertcheverry & Agnew, 2007). Of course, finding evidence that romantic partner smoking is influencing own smoking does not preclude the possibility that selection processes are also occurring. These selection processes may lead to choosing romantic partner's based, in part, on cigarette use. Once a partner with particular smoking behaviors is selected, the partner likely becomes a source of influence relative to smoking. The current

research focuses on the role that selection plays in the association between young adult cigarette use and several romantic partner variables.

Own Behavior, Smoker Prototypes, and Perceived Approval

The most common assumption underlying smoking selection effects is that a person's own smoking is the most relevant predictor of the smoking behavior of those with whom they "select" to associate. Applying the idea of selection to romantic partners, the greater a person's own level of smoking, the more likely they will be to initiate a romantic relationship with a smoker. However, this prediction ignores the possibility that factors beyond own smoking lead to selecting a romantic partner with certain smoking-relevant characteristics. Past research on peer selection has examined how other factors beyond own smoking predict peer behavior and opinions, such as parental involvement (Simons-Morton et al., 2004) and participant gender (Wills & Cleary, 1999). Less common are studies that focus on psychological factors that may contribute to selection processes beyond own smoking behavior. One theoretical model that has considered psychological constructs that may be relevant to selection is the Prototype / Willingness Model (Gibbons, Gerrard, & Lane, 2003). The PWM Model proposes a social reaction path to substance use in which the risk images or prototype held about the type of person who uses substances (or engages in other risky behavior) influences one's own willingness to use substances. Although the prototype image is typically assumed to be relevant to one's own substance use (more positive images, more use), it has also been argued to predict preferences for affiliation. For example, in a study of adolescent substance use, participants with more positive prototypes of a substance user were more likely to have friends who also used substances concurrently (Gibbons, Gerrard, Vandewater, Wills, Brody, & Conger, 2004).

The prototype construct has relevance for understanding selection processes for peers and friends but also for romantic partners. Viewing the typical smoker more positively (or less negatively) should lead to a greater willingness to affiliate with smokers and, presumably, to initiate a romantic relationship with a smoker. The current research tests the hypothesis that one's prototype of a typical smoker will predict selection of a romantic partner who smokes, above and beyond the participant's own current smoking.

In addition to selecting a romantic partner on the basis of correspondence between the partner's behavior and one's own behavior, selection may also be guided by perceptions of a partner's smoking-related beliefs. For example, one's own smoking (or lack of smoking) might lead one to prefer a romantic partner who not only has similar smoking habits but who also approves (or disapproves) of smoking. A smoker prototype likely has a similar effect on selection of a romantic partner who approves or disapproves of smoking, as similarity in beliefs is a common characteristic people look for in a romantic partner (Baruchfeld & Reiss, 1998). Past research has found that perceived approval for smoking received from peers is a predictor of adolescent smoking (Carvajal, Hanson, Downing, Coyle, & Pederson, 2004; Chassin, Presson, Sherman, Montello, & McGrew, 1986; Play et al., 1994; Tucker, Ellitson & Klein, 2002). However, few studies have examined perceived romantic partner (dis)approval for smoking among young adults and, to our knowledge, no studies have done so over time.

The Current Research

The current research employs a multi-wave longitudinal design to examine how young adult smoking and smoker prototypes are associated with selection effects for romantic partners. Two sets of analyses were performed. The first analyses used own smoking, prototypes, and perceived partner approval of smoking, along with multiple control variables, to predict future

romantic partner smoking. The second analyses used the same variables and controls to predict future romantic partner approval of smoking.

Method

Participants

Details regarding the selection and retention of participants for the present study are available (Tiffany et al., 2004). Participants were selected from responses to a screener survey (N = 4,690) administered to incoming university freshmen during an orientation program held in the summer preceding the academic year (response rate = 71% of all incoming students). Two thousand and one individuals completing the screener reported at least some experience with smoking (i.e., at least one puff of a cigarette in their lifetime) and those individuals formed the pool of eligible main study participants. Participation in the main study was restricted to those with at least minimal exposure to smoking because one of the goals of the main study was to examine smoking trajectories and changes in smoking over time. The trajectories of interest were unlikely to occur with participants who had not smoked prior to their first year in college.

Given limited funds and specific research goals, our intention was to follow a sample of approximately 1,000 participants who met our screening criteria. To this end, we sent a postcard to all eligible participants with details about the study. The first 1,200 participants who contacted the experimenter or who were reached by phone and agreed to participate were scheduled for the baseline survey. Once 1,200 participants were scheduled for the baseline, attempts to enroll additional participants were halted. Thus, those eligible to participate who did not participate in the main study include those who could not be reached (incorrect address or phone number; in the process of moving to campus and unreachable), and who wished to participate but not before the participant target number had been reached. In the end, 912 individuals completed the

baseline survey and took part in weekly web-based surveys throughout the 35-weeks of their freshman year. The sample is 46% female and 95% Caucasian.

Procedure

Participants completed the baseline survey the week prior to the first week of fall classes in August (approximately 8 weeks after completing the screener survey). The baseline survey asked participants extensive questions about cigarette use and social factors related to smoking.

Following the baseline survey, participants were presented with a set of questions as part of a weekly survey which participants accessed on a password-protected website. These weekly surveys were available beginning the third week of classes (two weeks after the baseline) and continued until the weekend after final exams in May of the spring semester. Surveys were available every week, including during the semester and spring breaks, for a total of 35 consecutive weeks. Participants were paid for completing each survey. Despite the intensive nature of the 35-week study, the average weekly participation rate was 87%.

A set of questions was presented each week to participants focusing primarily on cigarette use for the period since their last weekly survey response. Participants were asked to indicate their cigarette use for each day since they had last completed the survey or for the previous ten days (whichever was a smaller number of days). Beginning with the second week of weekly surveys, participants responded to a set of questions regarding their friends as well as a romantic partner (if they reported having one). These relational questions were repeated on a four-week schedule following the second weekly survey (i.e., in Week 6, Week 10, Week 14, etc.). The specific variables used in the present analyses are described below.

Focusing on Selection

The current research was concerned with the role that participant's own smoking, smoker

prototypes, and perceived partner approval for smoking play in the selection of a romantic partner over time. In order to focus exclusively on selection, only romantic relationships that began during the course of the study were included in analyses. Participants who entered the study already involved in a relationship were included in analyses if their original romantic relationship ended and a new romance was initiated during the study.

Monthly Measures

Romantic Relationship Initiation. Every four weeks, starting in Week 2, participants were asked if they were currently in a romantic relationship. Participants were considered to have initiated a romantic relationship if at one time point they indicated they were NOT in a romantic relationship and then four weeks later indicated they were in a romantic relationship. For example, participants who indicated they were not in a romantic relationship at Week 2 but did indicate they were in a romantic relationship at Week 6 were considered to have initiated a romantic relationship. To ensure the relationships were of a minimal level of stability, relationships that were initiated but were reported as broken-up at the following relationship data collection time period were excluded (i.e., the relationships lasted less than four weeks). The current analyses only include the first relationship that a given participant initiated during the study. The majority of participants who initiated a relationship only initiated one during the study. A variable was created to indicate in which of the relationship data collection periods the romance was initiated. Only heterosexual romantic involvements were included in the current analyses given that not enough same-sex romances were reported to investigate possible differences by romantic partner type.

Romantic Partner Smoking. Participants who indicated that they were in a romantic relationship were asked to indicate the level of their partner's smoking. Participants used a

seven-item scale ranging from 0 to 6, with 0 corresponding to the anchor "Does not smoke", 3 anchored by "Smokes a moderate amount", and 6 anchored by "Smokes a lot."

Romantic Partner Approval. With respect to their current romantic partner, participants were asked: "Do you think this person would approve or disapprove of your smoking?"

Responses on a seven-point scale ranged from -3 (strong disapproval of smoking) to +3 (strong approval of smoking).

Pre-Relationship Smoking. Participants provided retrospective data for the number of cigarettes smoked during each day of the study as part of each weekly survey. The weekly smoking measures were averaged across four weeks to create average monthly smoking measures. For participants who indicated they initiated a relationship, smoking prior to the relationship was measured by the average monthly smoking score for the period before the time period when participants last indicated they were not involved in a romantic relationship. For example, if a participant initiated a romantic relationship in week 14, then the pre-relationship smoking measure would be the average number of cigarettes smoked for weeks 7 through 10 (when the participant was not involved in a romantic relationship).

Baseline Predictors

Smoker Prototypes. At baseline, participants were asked to indicate whether they knew a "typical smoker." Of the initial 912 participants, 795 indicated they knew a typical smoker and were asked to provide their prototype of such a person. The prototype measure consisted of six positive and five negative characteristics: considerate, friendly, smart, attractive, honest, reliable, self-centered, moody, dependent, irrational, and weak. To create an overall measure, the five negative items were reverse coded and then all 11 characteristics were averaged ($\alpha = .78$)

Several measures were included in the baseline survey to assess participants' previous

smoking experience. These variables were included to examine their association with romantic partner variables and selection processes:

30-day Pre-Baseline Smoking. At baseline, participants were asked whether they had smoked during the 30-days prior. If the participant did not smoke during this time, the variable was coded as 0. Participants who did smoke during this time were asked to indicate how many days out of the last 30 they had smoked, using the following response options: 1 = 1 or 2 days; 2 = 3 to 5 days; 3 = 6 to 9 days; 4 = 10 to 19 days; 5 = 20 to 29 days; 6 = all 30 days.

Baseline Controls

Parental Smoking. Participants were asked to indicate separately whether their father and mother was a current smoker, had been a smoker, was not a smoker or if the participant did not know their parents' smoking history. This variable was dichotomized to indicate whether a mother or father was a smoker (currently or in the past, coded as 1) or not a smoker (including if the participant did not know, coded as 0).

High School Friend Smoking. Participants were asked to indicate how many of their five closest friends from high school smoked, using a scale ranging from 0 to 5.

High School Friend Approval. Participants were asked to indicate how their close friends would feel about their smoking cigarettes weekly and a second question about how their close friends would feel about their smoking one or more packs of cigarettes a day. Both questions used a three-item response scale with anchors 1 = Not disapprove, 2 = Disapprove, 3 = Strongly disapprove. These questions were then averaged together and showed good reliability ($r = .80$).

Sex. Participant sex was coded as male = 0 and female = 1.

Timing of and Transformations to the Pre-Relationship Smoking Variable

Examinations of the participant pre-relationship smoking variables indicated that they

were positively skewed. Inverse transformations were performed to normalize the variable. The transformations had the effect of higher numbers representing lower levels of smoking and scores close to zero representing higher levels of smoking. To make the results more readily interpretable, we subtracted 1 from each participant's transformed smoking variable and then multiplied it by -1 . These transformations do not change the statistical estimates but do make understanding coefficients easier as higher numbers are then associated with greater smoking. However, the coefficients no longer directly correspond to the number of cigarettes smoked.

Analytic Approach

Participants could report initiating a romantic relationship at six different time points during the study. Therefore, the measures of time in the analyses were person-centered. The zero point of the time variable refers to the data collection period when participants indicated they had initiated a romantic relationship. The time variable then increases by one for each relationship data collection time period until the end of the study. In order to examine change over time, relationships initiated within a month of the last relationship data collection period were not included in the current analyses.

Due to how the time variable was coded, a participant's reported relationship initiation time (when time = 0) could occur during Week 6, Week 10, Week 14, etc. This person-centered time variable allows for the prediction of romantic partner variables at the time the relationship was initiated and how they change over time. Time in this study is based on the initiation of the relationship not the actual chronological week on which relationship initiation occurs.

We used individual growth curve models to predict partner smoking and partner approval for smoking over time (Singer & Willett, 2003). All analyses were completed using SAS Proc Mixed, with maximum likelihood estimation. Individual growth modeling allowed examinations

of the associations between participant smoking, prototypes and romantic partner smoking and approval following relationship initiation.

Results

Means and Correlations among Variables

Descriptive statistics and correlations for study variables at baseline or at the initial relationship initiation measurement time point are presented in Table 1. All of the control variables were retained in the analyses, even if they were not found to correlate significantly with romantic partner smoking or approval.

Participant Pre-Relationship Smoking and Smoker Prototype Predicting Romantic Partner Smoking (Table 2)

The first set of analyses was designed to test the role that participant smoking and smoker prototypes play in selection of romantic partners. Model 1 in Table 2 presents the initial analysis which includes the control variables collected at baseline as well as the intercept term and the person-centered measure of time. The intercept and the time variable were included as random variables to test whether a significant amount of variability exists in these factors, warranting the addition of variables to explain this variance. The dependent variable was the measure of romantic partner smoking as provided by the participant at relationship initiation and every four weeks after relationship initiation, until either the relationship or the study ended. As indicated in Model 1 in Table 2, both the intercept and the time variable were significant. The time variable indicates that romantic partner smoking decreases over the course of the relationship. In addition, the baseline friend approval measure was significantly associated with romantic partner smoking. Moreover, the significant sex finding indicates that the romantic partners of female participants were more likely to be smokers than the partners of male participants. Most importantly, the

random effect for both the intercept and time were significant.

Model 2 in Table 2 adds participant pre-relationship smoking as well as smoker prototype to the prediction of romantic partner smoking at relationship initiation and in the following months. As shown in Model 2, both variables were significant predictors of participant smoking and in the predicted direction, as higher levels of pre-relationship smoking and more positive smoker prototype were associated with selecting a romantic partner who smokes more. Model 2 provides good support for the relevance of both variables to selection.

Model 3 in Table 2 tests whether the strength of the association between participant pre-relationship smoking, smoker prototype and romantic partner smoking changed over the months following the initiation of the relationship. The results shown in Model 3 indicate that the associations of pre-relationship smoking and smoker prototype with romantic partner smoking do not change during the months following relationship initiation. Model 4 in Table 2 tests whether the association between pre-relationship smoking, prototypes and romantic partner smoking varies depending on the sex of the participant. As shown in Model 4, the strength of the associations with romantic partner smoking do not vary by sex.

The participant pre-relationship smoking measure uses smoking levels as measured at least a month before the participant indicated they were involved in a romantic relationship, suggesting the association between this measure and partner smoking is due to selection. However, it is possible that although participants were not currently romantically involved, they already knew and were interacting on some basis with their future romantic partner. This may have provided an opportunity for the future romantic partner to influence participant smoking. Thus, it is possible the effects presented in Model 2 could be due to influence not selection. In order to provide a second test of selection, the participant pre-relationship initiation smoking

measure was replaced with the 30-day measure of smoking collected at baseline. Although it is possible that the participant may have been interacting with and influenced by their future romantic partner at baseline, the greater difference in time between baseline and when many of the relationships were initiated makes this less likely. As can be seen in Model 5 in Table 2, the baseline 30-day smoking measure was significantly associated with partner smoking and smoker prototype remained a significant predictor of partner smoking. Both Models 2 and 5 provide good support for selection effects on smoking.

As shown in Table 1, romantic partner smoking and romantic partner approval of smoking are significantly correlated. This suggests that the significant associations between participants' variables and partner smoking could be spurious, as it is possible that participant smoking and prototype are actually selecting for partner approval and not partner smoking. Thus, it is important to control for the effects of partner approval. Model 6 includes the time-varying covariate of partner approval (measured on the same occasions as partner smoking) along with participant pre-relationship smoking and smoker prototype as predictors of partner smoking. As can be seen, partner approval was positively associated with partner smoking. More importantly, both participant smoking and smoker prototype remained significantly associated with romantic partner smoking.

Participant Pre-Relationship Smoking and Smoker Prototype Predicting Romantic Partner Approval (Table 3)

The analyses presented in Table 3 are identical to those presented in Table 2 except the dependent variable is romantic partner approval of smoking. Model 1 in Table 3 indicates that romantic partner approval decreases (or becomes more disapproving of smoking) in the months following relationship initiation. As with partner smoking, both baseline measures of friend

approval and participant sex were significantly associated with partner approval. Most importantly, the random effects of both the intercept and the measure of time were significant, indicating that adding more variables to explain that variance is warranted.

Model 2 in Table 3 adds the measures of participant pre-relationship smoking and smoker prototype to the prediction of partner approval. As with the prediction of partner smoking, both variables were significant predictors of partner approval. These results provide good evidence of selection processes for partner approval.

Model 3 in Table 3 examines whether the size of the coefficients for participant pre-relationship smoking and smoker prototype change during the months following relationship initiation. The coefficient for smoker prototypes does not vary over time. However, the strength of the association between participant smoking and partner approval decreases over the months following relationship initiation.

Model 4 in Table 3 tests whether the size of the coefficient for participant pre-relationship smoking and smoker prototype differs based on participant gender. As with Model 4 of Table 2, the strength of the association of the participant variables with partner approval does not vary by sex of the participant.

Model 5 in Table 3 provides an alternative test of selection by using the baseline 30-day measure of smoking along with the smoker prototype measure to predict partner approval. The rationale for this analysis is the same as for Model 5 of Table 2. The baseline 30-day smoking measure and the smoker prototype measure were significantly associated with partner approval. Model 5 in Table 3 along with Model 2 of Table 3 provide good evidence for selection effects on romantic partner approval of smoking.

As it is possible that participant smoking and prototype are actually selecting for partner

smoking and not approval, it is important to control for the effects of partner smoking. Model 6 in Table 3 adds romantic partner smoking (collected concurrently with partner approval) to the prediction of partner approval. Both participant pre-relationship smoking and smoker prototype remained significantly associated with partner approval of smoking. Model 6 also includes the pre-relationship smoking*time interaction that was significant in Model 3. The pre-relationship smoking interaction with time remained significant when partner smoking was included in the model.

Discussion

Results from the current investigation provide important evidence of the role of selection for characteristics relevant to smoking in the initiation of romantic relationships. As shown in Tables 2 and 3, participants who smoke and have a more positive prototype of the typical smoker are more likely to initiate a romantic relationship with someone who smokes and who has a higher level of approval for smoking. These results did not vary based on participant gender. Although selection has not been typically applied to romantic partners, it appears that selection processes based on cigarette use do play a role in romantic partner initiation. Of course, selection for characteristics related to smoking may not be the main reason underlying the initiation of a romance. However, our data indicates it plays a role, either through conscious choices or through shared activities and behaviors that bring two people who have similar smoking behavior into contact.

The current research employed several tactics to separate selection from influence processes. First, romantic relationships that existed prior to the beginnings of the study were not included in the analyses. This exclusion criterion decreases the likelihood that the measures of smoking and prototypes taken at baseline were influenced by the romantic relationship instead of

guiding romantic partner selection. Second, the measures of participant smoking and prototypes were measured well before the relationship was initiated, decreasing the possibility that the future romantic partner influenced participant smoking or the formation of smoker prototypes before the relationship began.

The current findings should not be interpreted as meaning that influence is not occurring in these relationships. As other studies have demonstrated (Simons-Morton, et al., 2004; Willis and Cleary, 1999) influence processes are important. Moreover, recent research has found evidence of influence from romantic partners on smoking (Echeverry & Agnew, 2007). It is likely that selection and influence commonly both occur (Bray, et al., 2003). In fact, the current results are particularly interesting if they suggest that the selection processes demonstrated in these analyses are resulting in romantic partners whose smoking and perceived approval of smoking are, in turn, influencing participant smoking.

It is important to note that participant smoking and smoker prototypes contributed to the selection of a romantic partner who had particular smoking habits and opinions regarding smoking. These analyses suggest that research on selection that focuses entirely on participant smoking as the determinant of selection may be ignoring other important predictors. While past research has examined variables such as parental involvement or education and their relevance to selection, the current analyses focus on a psychological variable, the prototype of a smoker, as a predictor of whether young adults will initiate a relationship with someone who smokes and approves or disapproves of their smoking. This result has important implications for intervention and more work is needed in this area. The finding suggests that decreasing the positivity of a young adult's smoker prototype may not only make him or her less likely to smoke (Gibbons et al., 2003) but may also make the person less likely to initiate a relationship with a smoker and

expose themselves to potential influence from that partner.

Significant selection effects were found for partner smoking and for partner approval of smoking. These selection effects remained even after controlling for the other partner variable.

Both perceived approval and close other's smoking behavior have been found to be predictive with respect to peers' (e.g. Flay et al., 1994) and romantic partner smoking (Etcheverry & Agnew, 2007). Therefore, the finding that both partner variables are selected for has relevance for understanding cigarette use. Importantly, it suggests that not only do young adults select partners based on smoking, but they also select based on a potential partner's perceived approval or disapproval of smoking.

One important caveat to the current research is that both romantic partner smoking and approval of smoking were based entirely on participant perceptions. Measures were not collected from the romantic partner: it is possible that these perceived partner measures were not entirely accurate and may represent projection of the participant's own behavior and opinion onto their romantic partner (Kandell, 1996). However, there are several reasons why the current findings are important even though the measures of partner variables are drawn from the participant. First, perceptions of others' smoking and actual smoking tend to be strongly correlated (Urberg, Shyu & Liang, 1990). Second, a large amount of research has found that perceptions of peer smoking are predictive of participant smoking (Derzon & Lipsey, 1999). Recent research has found perceptions of partner smoking and perceived partner approval to be predictive of future participant smoking (Etcheverry & Agnew, 2007). In most studies of peer, friend and romantic partner's association with participant smoking, the variables collected are participants' perceptions of these other people. These perceptions have been found to be predictive of adolescent and young adult smoking. This suggests that even if the perceptions of partner

smoking and approval included in the present analyses do not match perfectly with actual partner behavior and opinions, it is still reasonable to expect that these perceptions are likely to influence future participant smoking, perhaps even more so than the actual partner variables do.

An important question is how well these results would replicate with respect to selection for other substances. There are differences between smoking and other substances that must be considered. For example, for the population studied, cigarette use is legal but alcohol use is not. Moreover, cigarettes are often smoked publicly and in a wide variety of situations. Therefore, it may be easier to select for cigarette use and approval in a partner. For other substances, it may be less obvious who is and who is not a user, especially in the initiation stages of a relationship, making it more difficult to select for the respective behavior. At the same time, some studies have found evidence of selection for alcohol and other substances (e.g., Curran et al., 1997; Leonard & Mudar, 2003).

Conclusion

The current research provides strong support for selection effects based on partner smoking and partner approval of smoking. Results indicate that selection effects for smoking are not limited to the actual behavior of smoking. Instead, young adults, in part, select a romantic partner based on that partner's perceived attitudes toward smoking as well. In addition, the current research examined how psychological constructs, like smoker prototype, contributes to selection for partners over and above selection as the result of own smoking behavior. Overall, the current research suggests the importance of examining romantic partner factors, both in terms of their relevance to selection but also because of recent research indicating partners can influence own smoking (Etcheverry & Agnew, 2007).

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Table 1. Descriptive Statistics and Correlations Between Study Variables Assessed at Baseline or at Relationship Initiation.

	Mean	SD	Range	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Partner Smoking	1.25	1.97	0 - 6	-									
2. Partner Approval	-1.45	1.66	-3 - +3	.62**	-								
3. Pre-Relationship Smoking	.84	2.24	0 - 13.8	.27**	.31**	-							
4. Baseline Smoker Prototype	6.34	1.46	2.55- 11	.18**	.27**	.09	-						
5. Baseline 30-Day Smoking	1.64	1.90	0 - 6	.30**	.35**	.58**	.20**	-					
6. Father Smoking	.41	.49	0 - 1	-.04	.01	.12	.00	-.04	-				
8. Mother Smoking	.32	.47	0 - 1	-.06	.04	.07	.07	.04	.32**	-			
9. H.S. Friends Smoking	1.99	1.63	0 - 5	.18**	.30**	.24**	.07	.34**	-.05	.06	-		
10. H.S. Friends Approval	2.10	.68	1 - 3	-.20**	-.28**	-.25**	-.15*	-.33**	.06	-.06	-.54**	-	
11. Sex	.62	.49	0 - 1	.20**	.13*	-.04	.06	-.02	.04	.01	.03	.04	-

*p < .05; **p < .01

Table 2. Estimates of Fixed and Random Effects Predicting Romantic Partner Smoking from Participant Pre-Relationship Smoking and Smoker Prototype (N = 217)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Fixed Effects						
Intercept	1.386* (.538)	.904 (.524)	.898 (.525)	1.060* (.536)	.769 (.535)	.924* (.476)
Time	-.047* (.022)	-.048* (.022)	-.044 (.026)	-.048* (.022)	-.047* (.022)	-.035 (.02)
Covariates						
Pre-Relationship Smoking (PRS)		1.384*** (.386)	1.425*** (.410)	.861 (.559)		1.11** (.353)
PRS * Time			-.023 (.075)			
PRS * Sex				.939 (.736)		
Smoker Prototype		1.83* (.071)	1.93* (.077)	2.40 (.144)	1.60* (.073)	1.30* (.065)
Smoker Prototype * Time			-.006 (.015)			
Smoker Prototype * Sex				-.076 (.165)		
Baseline 30-day Smoking					.206*** (.060)	
Romantic Partner Approval						.213*** (.025)
Controls						
Relationship Initiation	.053 (.067)	.079 (.064)	.079 (.064)	.076 (.064)	.056 (.064)	.080 (.058)
Father Smoking	.114 (.235)	.090 (.224)	.089 (.224)	.080 (.208)	.224 (.204)	.078 (.215)
Mother Smoking	-.389 (.247)	-.487* (.236)	-.487* (.236)	-.489* (.236)	-.431 (.215)	-.446* (.215)
High School Friends Smoking	1.48 (.080)	1.03 (.077)	1.04 (.077)	.098 (.077)	.095 (.078)	.079 (.070)
High School Friends Approval	-.416* (.191)	-.248 (.186)	-.249 (.186)	-.264 (.186)	-.231 (.187)	-.213 (.169)
Sex	.787*** (.223)	.795*** (.213)	.794*** (.213)	.616 (.254)	.780*** (.214)	.709*** (.194)
Random Effects						
Intercept	2.02*** (.273)	1.80*** (.251)	1.80*** (.251)	1.782*** (.249)	1.820*** (.250)	1.53*** (.202)
Time	.579*** (.070)	.573*** (.069)	.573*** (.069)	.572*** (.069)	.569*** (.069)	.482 (.072)
Goodness of Fit						
-2 Log Likelihood	2424.8	2404.8	2404.6	2403.1	2405.7	2334.3
AIC	2446.8	2430.8	2434.6	2433.1	2431.7	2362.3
BIC	2484.0	2474.7	2485.3	2483.8	2475.6	2409.6

Table 3. Estimates of Fixed and Random Effects Predicting Romantic Partner Approval of Smoking from Participant Pre-Relationship Smoking and Smoker Prototype (N = 217)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Fixed Effects						
Intercept	-1.33** (.438)	-1.826*** (.411)	-1.900*** (.415)	-1.732*** (.421)	-1.874*** (.425)	-1.82*** (.335)
Time	-.045† (.025)	-.049* (.024)	-.016 (.028)	-.049* (.024)	-.047* (.024)	.002 (.027)
Covariates						
Pre-Relationship Smoking(PRS)		1.33*** (.304)	1.666*** (.341)	.981* (.441)		1.036*** (.291)
PRS * Time			-.179* (.082)			-.178** (.077)
PRS * Sex				.627 (.577)		
Smoker Prototype		.240*** (.056)	.223*** (.063)	.253* (.112)	.224*** (.057)	.156*** (.045)
Smoker Prototype * Time			.008 (.016)			
Smoker Prototype * Sex				-.018 (.128)		
Baseline 30-day Smoking					.163*** (.048)	
Romantic Partner Smoking						.432*** (.034)
Controls						
Relationship Initiation	-.035 (.055)	-.004 (.051)	-.005 (.051)	-.007 (.050)	-.025 (.051)	-.041 (.041)
Father Smoking	.083 (.190)	.064 (.174)	.065 (.175)	.051 (.175)	.116 (.177)	-.002 (.141)
Mother Smoking	-.106 (.200)	-.208 (.184)	-.211 (.185)	-.204 (.184)	-.150 (.187)	.027 (.150)
High School Friends Smoking	.160* (.065)	.115† (.061)	.122* (.061)	.112† (.061)	.119† (.062)	.077 (.050)
High School Friends Approval	-.342* (.155)	-.156 (.145)	-.156 (.146)	-.163 (.146)	-.159 (.149)	-.054 (.118)
Sex	.401* (.181)	.397* (.167)	.398* (.167)	.280 (.198)	.367* (.170)	.047 (.138)
Random Effects						
Intercept	1.227*** (.166)	.972*** (.141)	.986*** (.141)	.967*** (.140)	1.020*** (.145)	.539*** (.095)
Time	.150* (.059)	.144* (.059)	.141* (.059)	.143* (.059)	.146* (.059)	.118* (.056)
Goodness of Fit						
-2 Log Likelihood	2320.8	2783.5	2778.6	2782.3	2790.3	2650.5
AIC	2342.8	2809.5	2808.6	2812.3	2816.3	2678.5
BIC	2380.0	2853.4	2859.3	2863.0	2860.2	2725.9