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Transitions in Social Influence at Adolescence: Who Induces Cigarette Smoking?

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A common theme in life span developmental psychology is that during adolescence there is a decrease in parental influence on the child and an increase in peer influence. Researchers who have examined this transition have shown that its dynamics vary with type of behavior. In the present study, the influence of parents and peers on children's smoking behavior is examined in both preadolescent and adolescent samples. By using a structural equation model with multiple indicators, methodological problems that have plagued earlier research in this area are avoided. We conclude that peer influence increases during adolescence. There is also a nonsignificant decrease in parental influence. For preadolescents, parents and peers seem equally influential; for adolescents, peers are more influential. These results have implications for public health intervention programs.

An important cornerstone of the literature on psychological development is the notion that the life cycle is characterized by a gradual shift away from parents and toward peers. This shift is perhaps most dramatic or significant at the time of adolescence when both social and biological forces push a child to develop an identity independent from his or her parents and to foster tighter bonds with peers (see, e.g., Adelson, 1980; Blos, 1962; Coleman, 1980; Gold & Douvan, 1970). As Gold and Douvan (1970) wrote, "All theories of adolescence agree that this is the time when the child must cut and run, when he must disentangle himself from the family and become his own man—emotionally, behaviorally, in his values and controls" (p. 131).

There is virtual unanimity among theorists in the belief that parents become less influential and peers become more influential during adolescence. Empirical work supports the notion of an increase in peer influence (Berndt, 1979; Bixenstein, DeCorte, & Bixenstein, 1976; Devereux, 1970) and a decrease in parental influence (Berndt, 1979; Bowerman & Kinch, 1959; Douvan & Adelson, 1966). There is less agreement on the relative importance of parents and peers at any given point in the life cycle near the onset of adolescence. Whereas parents are seen as more influential during childhood and peers are seen as more influential subsequently (Berndt, 1979; Lasseigne, 1975; Utech & Hoving, 1969), it is unclear when the influential impact of peers begins to outweigh that of parents.

Some theorists have argued that from the onset of adolescence, the peer group is the dominant factor in influencing behavior (e.g., Ausubel, 1954; Josselyn, 1952). Brittain (1963, 1968) offered empirical evidence for a more refined view of the relative influence of parents and peers. He suggested that the relative influence varies with situations or behaviors as well as with age. Lesser and Kandel (1969) reached a similar conclusion. This suggests that research examining the transition from parental to peer influence during adolescence needs to focus on specific behaviors and to confine conclusions to those behaviors.

To examine the transition in patterns of influence, we have chosen to focus on a par-

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ticular behavior that has been of interest to the public health community, that is, cigarette smoking in youth. A number of public health education and research projects are currently being conducted with the aim of preventing the onset of cigarette smoking in children (e.g., Botvin, Eng, & Williams, 1980; Evans, 1976; Hurd, Johnson, Pechacek, Bast, Jacobs, & Leupker, 1980; McAlister, Perry, Killen, Slinkard, & Maccoby, 1980). To design such intervention projects most effectively, it is clearly important to know whether parents and peers influence smoking behavior at various ages (Jefferys & Westaway, 1961; McAlister, Perry, & Maccoby, 1979). Only if we know what social influences lead to smoking can we effectively design intervention programs to inhibit it. Thus, we have two goals in this article. First, we wish to document the general developmental trend from parental to peer influence at adolescence. Second, we focus on smoking behavior in the hope that our results will be informative for those who are attempting to prevent smoking in youth.

Various studies have attempted to assess the magnitude of parental and peer social influences on smoking. However, these studies have often reached contradictory or inconclusive results. Studies of junior high school students (Bewley & Bland, 1977; Bewley, Bland, & Harris, 1974; Mausner & Mischler, 1966; Palmer, 1970) suggested that parental smoking is significantly correlated with children's smoking. Work with high school students (Banks, Bewley, Bland, Dean, & Pollard, 1978; Beaglehole, 1978; Cartwright et al., 1960; Lanese, Banks, & Keller, 1972; Salber & MacMahon, 1961) has indicated that a child is more likely to smoke if both parents smoke than if only one smokes and that children with one parent who smokes are more likely to smoke than children with nonsmoking parents. Bergen and Olesen (1963) found no such association, however, in a sample of high school students. Studying college students, Straits and Schrest (1963) and Bonnell-Lewis (1963) did not find this relationship either.

It has also been shown that children tend to have friends whose smoking behavior is similar to their own. In junior high school (Bewley & Bland, 1977; Bewley et al., 1974), high school (Allegrante, O'Rourke, & Tuncalp, 1977; Bergen & Olesen, 1963; Hill, 1971; Lanese et al., 1972; Rudolph & Borland, 1976), and college (Zagona & Zurcher, 1965), students who smoke tend to have friends and a best friend who smoke, and students who do not smoke tend to have nonsmoking friends.

A few studies of cigarette smoking in children have examined developmental differences in influence patterns between preadolescents and adolescents. Levitt (1971) collected data on reported influence from a huge sample ranging from 5th-grade to 12th-grade children. He found that the self-reported influence of parents on smoking behavior decreases with age and that the self-reported influence of peers increases at the onset of adolescence. Schneider and VanMastrigt (1974) also reported differences between 10–11-year olds and 13–14-year olds in terms of attitudes relevant to smoking.

Methodological Problems in Earlier Studies

Although the studies that we have reviewed tend to support the notion that parental influence on smoking decreases with age and peer influence increases, they suffer from a variety of methodological problems that render their results inconclusive. First of all, many of the studies that have examined relationships between a child's smoking and parental or peer smoking have assessed the magnitude of influence by calculating Pearson product-moment correlations. Differences by age in parental and peer influence have been estimated by comparing the magnitude of correlations between groups of subjects who differ in age. It is a well-known statistical fact that the magnitude of correlations and other standardized measures of association are affected by the variances of the variables that are correlated (Blalock, 1967). Comparisons of correlations between groups may be misleading if the within-group variances differ between groups. When comparisons of correlations with smoking behavior are made between preadolescents and adolescents, it is likely that the variability in smoking behavior will

differ dramatically in the two groups. Many fewer preadolescents are likely to smoke. Hence, in this case comparisons of correlations between age groups are likely to be misleading. Correlations in the younger group will tend to be smaller than in the older group simply because of reduced variability.

To overcome this problem, various methodologists have recommended comparing unstandardized structural or regression coefficients between groups rather than standardized measures of association (Duncan, 1975; Judd & Milburn, 1980; Kenny, 1979). Such unstandardized coefficients assess the degree of influence of peers and parents in the metric on which the variables have been measured rather than in a metric that is derived from the within-groups variability. As long as the measurement metrics are identical between groups, unstandardized structural coefficients are relatively unaffected by differences in variability.

Whereas comparisons between age groups must be made using unstandardized coefficients to ensure similar metrics in the groups, comparisons of the relative influence of parents and peers within a group must usually be done using standardized coefficients. This is so because within any group the parental and peer variables are likely to be measured in different metrics. If we were to compare unstandardized coefficients within groups, metric differences in the variables would likely be confounded with differences in magnitude of influence. The general rule is that comparisons of parameters should always be conducted using the same metrics.

The second methodological shortcoming of prior research in this area derives from the fact that influence has been estimated by examining relationships between single indicators of behavior. Such indicators undoubtedly contain error, resulting in biased estimates of association (Judd & Kenny, 1981; Kenny, 1979). To the extent that the amount of error in the indicators differs between age groups (a not unlikely situation), coefficients of association will be biased to differing degrees in the various groups.

To overcome the biasing effects of measurement error, multiple indicator models can be employed (Bentler, 1980; Kenny, 1979). In such models, association between unmeasured or latent constructs can be estimated. Such estimates of association are unbiased by measurement error, since random error is idiosyncratic to single indicators of the latent constructs. The estimation of the parameters of multiple indicator models with latent constructs can be done through the LISREL procedure, developed by Jöreskog and Sörbom (1978).

In the present study, we examined the relative influence of parents and peers on smoking behavior in preadolescent and adolescent youth. Specifically, the impact of parents' smoking and peers' smoking was assessed. In addition, we estimated the impact on smoking behavior of parental attitude toward a child's smoking, since parental smoking behavior and parental attitude have been shown to be only moderately correlated (Keeve, 1965; Zagona & Zurcher, 1965). To overcome the methodological problems of earlier research, we employed a multiple indicator model. In addition, unstandardized structural coefficients were used for parameter comparisons between groups, and standardized coefficients were used for comparing different parameters within a group (e.g., the relative impact of peers and parents in any given age group).

Method

Subjects

As past studies have done, we defined preadolescents and adolescents according to age (Bergen & Olesen, 1963; Schneider & VanMastrigt, 1974). To clearly discriminate between the two groups, we examined data from 11-year-olds and 14-year-olds. The data were collected by the Youth Health Promotion Project at the Harvard School of Public Health (see McAlister et al., 1980). Subjects in the sixth, seventh, and eighth grades were surveyed at schools in the Boston and San Francisco areas, representing a range of urban and suburban environments, socioeconomic classes, and races. Data were gathered through a self-administered questionnaire during one regular class period in either May 1979 or September 1979. There were 398 11-year-olds and 449 14-year-olds in the total sample. For our analyses complete data on all the variables used were required from each subject; 57% of the 11-year-olds provided complete data (n = 227), and 75% of the 14-year-olds provided complete data (n = 336).

Because a substantial number of subjects were omitted from the samples to be analyzed, it was important to determine whether students who provided complete data differ systematically from students who did not.

In fact, 49.8% of the students with complete data and 34.6% of the students without complete data reported that their father attended college. Also, 39.8% of the former group and 50.9% of the latter group reported that their father smoked cigarettes regularly. Therefore, the subjects with complete data seem to differ in systematic ways from the subjects without complete data. The results of our analyses should be generalized cautiously.

Indicators

Two indicators of child's smoking behavior were employed. The first asked the child how often he or she smoked, with the following response categories: "never," "once a month," "once a week," "every day." Children who responded "used to but quit" were dropped from the samples. The second indicator was an index derived by summing responses to three questions: (a) "Have you smoked a cigarette in the last month?"; (b) "Have you smoked a cigarette in the last week?"; and (c) "Did you smoke a cigarette yesterday?" Scores on both indexes ranged from 0 to 3 (higher scores indicated more frequent smoking).

A single indicator of the smoking behavior of peers was used. This variable was the percentage of the child's "really good friends" who smoked cigarettes. The percentage was computed by taking the ratio of responses to two questions. One asked the child how many "really good friends" he or she had and the other asked how many of these really good friends smoked. Children who reported they had no "really good friends" or who reported more friends smoked than their total number of friends were omitted from the samples.

Two different constructs were used to represent parental influences on the child. The first was parental smoking. Two questions were indicators of this construct. Children were asked how often each parent smoked. The response categories were, once again, "never," "once a month," "once a week," "every day." The second construct was parents' attitude toward the child's smoking; two indicators were used. The first stated, "If I smoked cigarettes and my parents found out, they would be . . .," with the following response choices: "really mad," "sort of mad," "not mad at all." The second item stated, "My parents have told me . . .", with the following answer choices: "I definitely shouldn't smoke cigarettes," "I probably shouldn't smoke cigarettes," "Smoking cigarettes isn't a big deal," "Nothing about smoking cigarettes," "I probably should smoke cigarettes." Children who reported having no father or no mother were omitted from the samples. (The frequencies for all the indicators appear in the Appendix.)

The Model

The structural and measurement models are presented in Figure 1. In this model, the three latent exogenous constructs (peer smoking, parental smoking, and parents' attitude) affect the latent endogenous construct (child's smoking). Disturbance or residual variation in child's smoking is represented by U8. Variance in each indicator (I1 through I7) is a function of the latent construct it represents. In addition there is residual variation in each indicator (U1 through U7).

Estimation

The following parameters of the model were estimated using the LISREL IV (Jöreskog & Sörbom, 1978) procedure: (a) the structural coefficients of latent exogenous constructs on the latent endogenous construct (β_1, β_2, and β_3); (b) the variances and covariances of the latent exogenous constructs; (c) the residual variance of the latent endogenous construct; (d) the loading coefficients of the indicators on the respective constructs; and (e) the disturbance variances of the indicators. Maximum likelihood estimates of these parameters are given by the LISREL procedure under the assumption of multivariate normality. Associated with the estimates is a goodness-of-fit chi-square statistic that can be used to determine whether the observed variance/covariance matrix of the indicators is consistent with the model. A nonsignificant chi-square indicates that the data are consistent with the model.

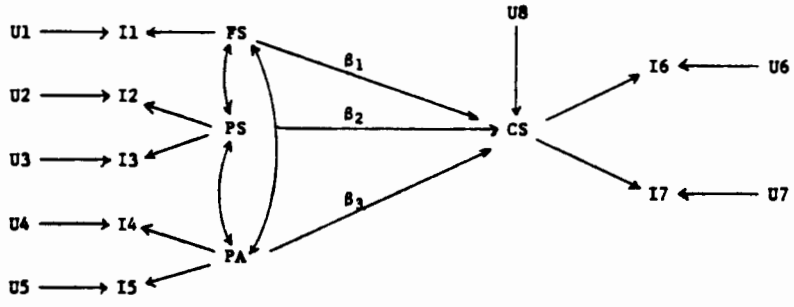

Figure 1. Multiple indicator model. (FS = peer smoking; PS = parental smoking; PA = parents' attitude; CS = child's smoking. I1 = percentage of friends who smoke cigarettes; I2 = father's smoking rate; I3 = mother's smoking rate; I4 = parental response to learning of child's smoking; I5 = parental instructions about child's smoking; I6 = child's smoking rate; I7 = child's smoking index. U1–U7 refer to the residual variation in each of the indicators I1–I7. U8 = disturbance or residual variation in CS.)

The LISREL procedure permits the researcher to simultaneously estimate parameters and examine the fit of the model in multiple groups. In addition, constraints can be imposed on the parameters that are to be estimated. Such constraints permit us to test, for instance, whether certain parameters are equal, either within or between groups. The chi-square that results from a more constrained model can be compared with a chi-square from a less constrained model. The difference between these two chi-square is itself a chi-square and can be used to estimate whether the less constrained model is significantly more consistent with the data (Judd & Milburn, 1980; Kenny, 1979).

For purposes of examining the equality of parameters between groups, the unstandardized structural coefficients must be estimated. To do this we must derive the unobserved variances of the latent constructs by fixing the loading coefficient for one indicator (I) of each construct at unity (Kenny, 1979; Long, 1976). In the present model, the loading coefficients for I1, I2, I4, and I6 were so fixed.

For comparisons of parameters within a group, the loading coefficients of all indicators are left free, and the variances of all constructs are fixed at unity. The resulting standardized or path coefficients then refer to all the constructs in a common metric.

Results

Table 1 presents the Pearson product-moment correlations of the two indicators of child's cigarette smoking (I6 and I7) with the indicators of peer smoking (I1), parental smoking (I2 and I3), and parental attitude (I4 and I5) for each group. Differences between groups in the correlations of I6 with the other indicators suggest that both peer and parental smoking become more potent influences during adolescence. The picture is less clear with the indicators of parental attitude; one indicator is more related with I6 among adolescents, whereas the other is more related among preadolescents. The correlations of I7 with I1 through I5 suggest a different picture, however. Peer smoking, parental smoking, and parental attitudes are all less highly correlated with I7 in the adolescent sample than in the preadolescent sample. Clearly, examining correlations between single indicators can be misleading, given the presence of fairly substantial measurement error in them.

Table 1
Correlations of Child's Smoking Indicators With Indicators of Peer Smoking, Parental Smoking, and Parents' Attitude

Child's smoking indicator	Indicator				
	Peer smoking	Parental smoking		Parents' attitude	
	I1	I2	I3	I4	I5
Preadolescents					
I6	.546*	.129	.179*	.245*	.235*
I7	.584*	.115	.142*	.265*	.140
Adolescents					
I6	.664*	.253*	.221*	.350*	.132
I7	.280*	.085	.135*	.147*	.073

Note. n = 227 for preadolescents; n = 336 for adolescents. I = indicator; I1 = percentage of friends who smoke cigarettes; I2 = father's smoking rate; I3 = mother's smoking rate; I4 = parental response to learning of child's smoking; I5 = parental instructions about child's smoking; I6 = child's smoking rate; I7 = child's smoking index. A higher score on all indicators is more prosmoking.
* $p < .05$.

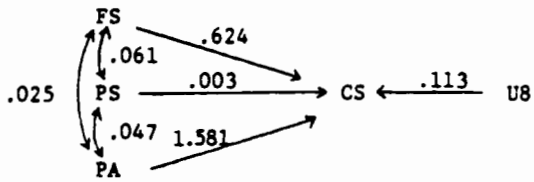

Figure 2. Maximum likelihood parameter estimates: preadolescents. (FS = peer smoking; PS = parental smoking; PA = parents' attitude; CS = child's smoking; U8 = disturbance or residual variation in CS.)

We turn now to the LISREL parameter estimates for our structural model. Figures 2 and 3 present the unstandardized parameter estimates among the latent constructs for each sample. In Table 2 the variances of the latent constructs, the loading coefficients for the indicators, and the disturbance variances for the indicators are presented. The model simultaneously fits the variance/covariance matrices of the two samples quite well, $\chi^2(18) = 21.41$, $p = .259$.[1] In other words, the obtained data in both groups are consistent with the hypothesized model. Ex-

[1] We estimated separate models for males and females in each age group to determine whether the structural coefficients differed by sex. The preadolescent sample was 44% male, and the adolescent sample was 56% male. When the coefficients were forced to be invariant across sex (within age group), the model was consistent with the sample data, $\chi^2(42) = 50.79$, $p > .10$. Hence, in the absence of sex differences, males and females were pooled within age group for all subsequent analyses.

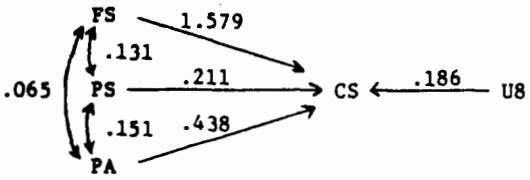

Figure 3. Maximum likelihood parameter estimates: adolescents (FS = peer smoking; PS = parental smoking; PA = parents' attitude; CS = child's smoking; U8 = disturbance or residual variation in CS.)

amination of the structural coefficients (βs) between the parent and peer constructs (peer smoking, parental smoking, and parents' attitude) and child's smoking suggests that the influences of peer smoking and parental smoking increase during adolescence, whereas the role of parental attitudes becomes less strong. From Table 2 we see that the variances of all four latent constructs increase with age.

To test whether the differences with age in the effects of peer smoking, parental smoking, and parents' attitude were significant, individual β coefficients were constrained equal between groups. When the effect of peer smoking on child's smoking was constrained to be equal, the resulting constrained model fit the sample data significantly less well than did the unconstrained model, $\chi^2(1) = 7.45$, $p < .05$. Thus the effect of peer smoking increases significantly with adolescence. However, constraints between age groups on the effect of parental smoking and on the effect of parental attitudes yield nonsignificant goodness-of-fit differences in both cases: for parental smoking constraint, $\chi^2(1) = .62$, $p > .05$; for parents' attitude constraint, $\chi^2(1) = 1.79$, $p > .05$. Thus, although the impact of peer smoking is greater during adolescence than prior to it, the effect of parents on the child's smoking shows no evidence of change.[2]

Table 2
Maximum Likelihood Parameter Estimates

Parameter	Preadolescents	Adolescents
Construct variances		
Peer smoking	.085	.133
Parental smoking	.324	.516
Parents' attitude	.026	.262
Child's smoking	.261	.798
Factor loadings		
I1	1.000[a]	1.000[a]
I2	1.000[a]	1.000[a]
I3	.922	.908
I4	1.000[a]	1.000[a]
I5	.792	.291
I6	1.000[a]	1.000[a]
I7	1.177	.395
Disturbance variances		
U1	0.000[a]	0.000[a]
U2	1.681	1.380
U3	1.547	1.540
U4	.134	.165
U5	.165	.184
U6	.070	.415
U7	.067	.925

Note. Indicators (I1-I7) are defined in Table 1. U1-U7 refer to the residual variation in each of the indicators.
[a] Parameters constrained to these valves for the purpose of estimation.

Table 3
Standardized β Coefficients From Structural Models

	Causal constructs		
Child's smoking	Peer smoking	Parental smoking	Parents' attitude
Preadolescent	.335	.003	.497
Adolescents	.645	.170	.251

To compare the relative influences of parents and peers on a child within an age group, we turn to the standardized coefficients between the exogenous and endogenous constructs presented in Table 3. When we examine the preadolescent coefficients, it appears that parental attitude is more in-

[2] Strictly speaking, comparisons of structural coefficients between groups should be made when the factor pattern matrices are constrained to be equal across groups (Alwin & Jackson, 1981). However, for these data, we were unable to accept the null hypothesis that the measurement model was equivalent in the two groups, $\chi^2(3) = 53.15$, $p < .001$. Because we felt that the between-groups comparisons were of sufficient interest, we tested differences in the structural coefficients when the factor pattern matrices were (a) constrained to be equal, and (b) not constrained to be equal; the metrics of the factors were specified by fixing the loadings of different indicators at unity (see Judd, Krosnick, & Milburn, 1981). However the between-groups tests are conducted, we reach the same conclusions: Parental influence does not change during adolescence, and peer influence increases.

fluential than is peer smoking, although parental smoking seems less influential than does peer smoking. For the adolescent group, peer smoking seems to be more influential than either parental attitude or parental smoking.

To test whether these standardized coefficients differ within groups, we imposed within-groups equality constraints on them. For the preadolescents we were unable to reject the model that all three exogenous constructs exert an equal influence upon a child's smoking, $\chi^2(2) = 2.18, p > .05$. Hence the differences in the parameters of Table 3 for that age group are not significant.

When we constrain the effect of peer smoking to equal the effect of parental smoking for the adolescents, the resulting parameter estimates fit the sample data significantly less well than the unconstrained parameters, $\chi^2(1) = 4.69, p < .05$. Likewise, when an equality constraint is placed on the effects of peer smoking and parental attitudes, the constrained model fits the sample data significantly less well than the unconstrained model, $\chi^2(1) = 6.25, p < .05$. Thus, for adolescents, peer influence upon smoking is significantly greater than is the influence of parents.

Discussion

We have reached conclusions that differ from theoretical predictions in some cases and that support such predictions in other cases. We found that whereas peers did become significantly more influential during adolescence, the influence of parents did not change. The influence of parental smoking seemed to increase during adolescence, and the influence of parental attitude seemed to decrease, though neither of these shifts was significant. Also, we found no difference between the influence of parents and peers on preadolescents but did find that peers were more influential on adolescents than were parents. Peer influence on preadolescents seemed to be stronger than the influence of parental smoking and weaker than the influence of parental attitude, though neither of these differences was significant. It seems in both samples that parental attitude was more influential than was parental smoking, although not significantly.

Our findings about changes in social influences at adolescence contrast with those of some other researchers. This may stem from the methodological problems in past research. First, the increase in the variance of child's smoking at adolescence may affect standardized measures of association so that samples appear different without any actual difference in parental or peer influence existing. When relatively few preadolescents smoke, it may not be informative to compare correlation coefficients. Second, measurement error in variables is likely to attenuate observed relationships unless multiple indicator models, such as the present one, are employed.

Although we believe that the methods we have used represent a real advance in research in this area, there remain some ambiguities behind our results that should be discussed. First of all, our analyses are based upon self-reports from children. There is little doubt that children may misreport parental attitudes and smoking, peer smoking, and their own smoking. Our results may have looked different had we gathered data directly from the parents and peers. Since all the smoking rates in the model were reported by the child, the variables may share method variance. Ideally, the disturbances to these variables should be allowed to correlate when the parameters are estimated. Our model would not be identified, however, if we did not assume that the disturbances are uncorrelated. Because data for both age groups were gathered through the same procedure, it is not clear that our comparisons between groups are necessarily biased by the self-report nature of the data.

The second ambiguity in our results arises from the distributional assumptions behind maximum likelihood estimation. The LISREL procedure assumes a multivariate normal distribution. In the present case, particularly among the preadolescents, this assumption probably does not hold. Unfortunately the degree to which this assumption is robust is not known (Bentler, 1980). Hence, the magnitude of error in our statistical tests is unknown.

A third problem in our research arises from the possibility that we have examined two distinct processes simultaneously without unconfounding them. Matarazzo and Saslow (1960) identified these two processes:

"There is considerable reason to believe that the factors which motivate people to smoke are probably very different from those factors which help perpetuate the habit" (p. 505). The only way to avoid this ambiguity would be to examine children longitudinally and predict smoking onset. Such an analysis would require richer data than we presently possess.

Finally, we have portrayed influence as a undirectional phenomenon. That is, peers and parents in our model influence the child, but the child in turn does little to influence smoking behavior in peer and parents. The unidirectional flow of influence in the model is unrealistic, particularly in the case of peers. Children are both subjects in this research and simultaneously peers. Ideally, to examine the magnitude of reciprocal causation between a child and his or her good friends, children would be matched with peers on an individual basis. If such data were available a more complex nonrecursive causal model could be estimated, as has been done in the literature on children's aspirations (Duncan, Haller, & Portes, 1971). Parent-child interaction is also, undoubtedly, a reciprocal process. Parents may well cease smoking because of complaints or other pressure from children. However, it is probably true that the influence of parent on child is of greater magnitude than the reciprocal process. In the case of peer-child reciprocal influence, it is most plausible to assume that the magnitude of influence in each direction is equal. Because of this problem, our unidirectional model has probably overestimated the impact of peers relative to the impact of parents. Nevertheless, the finding that peers become more influential during adolescence should not be affected by the reciprocal nature of influence.

In spite of these ambiguities in the present research, it is our belief that we have documented an important transition in development, looking in particular at the form that transition takes when dealing with a behavior that has major social and medical implications. Our conclusion that peer influence seems to grow, whereas parental influence does not seem to diminish, seems both theoretically significant as well as important for practical purposes. Intervention programs designed to change adolescent smoking behavior would do well to pay attention to the social forces, from both parents and peers, that encourage smoking.

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(Appendix follows on next page)

Appendix

Frequencies of Indicators for Preadolescents and Adolescents

Response	Preadolescents (%)	Adolescents (%)
Percentage of friends who smoke cigarettes[a]		
.0	70.9	51.2
.16	5.3	4.5
.20		.9
.25	2.6	1.8
.33	4.4	9.8
.40		1.2
.50	4.8	6.5
.60	.9	
.66	3.5	6.8
.75		.6
.80		1.2
.83	1.7	3.0
1.0	5.7	12.5
Father's smoking rate		
Never	54.6	64.0
Once a month	3.1	2.1
Once a week	6.2	3.6
Every day	36.1	30.3
Mother's smoking rate		
Never	63.4	61.6
Once a month	1.8	2.7
Once a week	7.0	2.7
Every day	27.8	33.0
Parental response to learning of child's smoking		
Really mad	87.2	64.6
Sort of mad	11.0	26.5
Not mad at all	1.8	8.9
Parental instructions about child's smoking		
Shouldn't smoke	85.9	77.4
Nothing or it's no big deal	11.9	21.4
Should smoke	2.2	1.2
Child's smoking rate		
Never	89.0	70.2
Once a month	4.0	8.6
Once a week	6.2	7.1
Every day	.9	14.0
Child's smoking index[b]		
0	88.5	61.3
1	3.1	7.4
2	4.4	.3
3	4.0	31.0

Note. Frequencies do not always sum to 100% because of rounding error. n = 227 for preadolescents; n = 336 for adolescents.

[a] The percentage was computed by taking the ratio of responses to two questions that asked the child how many "really good friends" he or she had and how many of these friends smoked.

[b] The index was derived by summing responses to three questions: "Have you smoked a cigarette in the last month?"; "Have you smoked a cigarette in the last week?"; and "Did you smoke a cigarette yesterday?"

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