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ABSTRACT

Problem behavior may be defined as behavior that is socially defined as a problem, a source of concern, or as undesirable by the norms of conventional society and the institutions of adult authority, and its occurrence usually elicits some kind of social control response. Key elements of problem behavior are: (1) problem behaviors are rare until early adolescence; (2) the rate then climbs to a peak level; (3) thereafter the problem behavior becomes less frequent for the remainder of the lifespan (unless it ceases to be seen as a problem behavior), and (4) the timing of these trends is different for different problem behaviors in respects such as the typical age of initiation and the rate and timing of decline. Problem behavior varies with age because of social norms that children be given increasing independence as they grow older. At each age, those adolescents who are less closely supervised are more likely to engage in problem behavior. Also relevant to this point is research that time spent socializing with peers in informal settings, away from adult supervision, is related to problem behavior. The question that remains is whether the relationship between independence and problem behavior, combined with the similarity in their age trends, is sufficient to account for age trends in problem behavior. Nine figures and two tables are attached. (LLL)

Toward an Explanation of Age Trends in Problem Behavior

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Toward an Explanation of Age Trends in Problem Behavior

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In my presentation today, I am going to give you the general outline of an explanation of age trends in problem behavior. This theory grows out of research I have been doing on the relationship between problem behavior and lifestyle or everyday activities. Let me warn you in advance that this presentation will be largely theoretical, for I have not yet tested this explanation. Nevertheless, I will marshall a variety of evidence supporting the plausibility of the various elements of the scheme.

I will begin by making clear what I mean by problem behavior and by giving you a little information about typical age trends in such activities. I favor Dick Jessor's definition that problem behavior is "behavior that is socially defined as a problem, a source of concern, or as undesirable by the norms of conventional society and the institutions of adult authority, and its occurrence usually elicits some kind of social control response." (Jessor and Jessor, 1977:33) I favor this definition because it denotes behavior that violates conventional normative standards. This is consistent with sociological conceptions of deviance. The definition includes most of the acts that are studied under the rubric of adolescent risk behaviors, such as alcohol and illicit drug use, violent behavior, and dangerous driving. One of my starting assumptions is that what is most distinctive about problem behaviors is that they are things "you're not supposed to do," so explanations that focus on that aspect of the behavior are more likely to be successful than explanations that focus on how much risk they pose to one's health and well being. I know that this is an issue on which I differ from some of the other panelists (including our discussant [Irwin and Millstein, 1986]), so this might be an interesting point for discussion later on.

Age Trends in Problem Behavior

Lets quickly look at a few figures that show typical relationships between age and problem behavior (Items 1 through 4). None of these graphs control for period and cohort effects, but studies which disentangle them from age invariably show that age effects predominate over the others (e.g., Menard and Huizinga, 1989).

The first figure reflects the arrest rate for violent crime in the U.S. at each age level from age 10 through 75 (McGarrell and Flanagan, 1984:471). Arrests for these offenses are essentially zero up to age 12, and rise above 1 per hundred from 16 through 23, with a peak at age 18. Arrests decline for the remainder of the lifespan until effectively reaching zero once again at about age 65.

The next two figures show age specific rates of substance use from the Monitoring the Future Study (Johnston, O'Malley, and Bachman, 1989). The first indicates how many adolescents had ever engaged in these behaviors by each grade level from 6th grade through high school. Once again, the behaviors are rare at the beginning of the period. By the 12th grade, most of the people who are going to engage in a behavior have done so. The next figure shows the prevalence (current rather than lifetime) for these problem behaviors during the years 18 through 30. There is much less change during this period, though heavy consumption of alcohol peaks at 21 to 22. Substance use does not decline as fast as general crime rates. Illicit drug use does decline substantially after this age range, but cigarette and alcohol use remain at relatively high levels well into adulthood. This is understandable because under the laws and norms of our society, smoking and drinking are acceptable behaviors for adults. Thus, they cease to be problem behaviors under our definition. My final graph of simple age trends is for premarital sexual intercourse from age 11 through 20. Again, the behavior is rare through age 12, after which it increases rapidly.

These, then, are the key elements of the phenomenon I wish to explain: 1) problem behaviors are rare until early adolescence, 2) the rate then climbs to a peak level, usually

rapidly, 3) thereafter the problem behavior becomes less frequent for the remainder of the lifespan (unless it ceases to be seen as a problem behavior), and 4) the timing of these trends is different for different problem behaviors in respects such as the typical age of initiation and the rate and timing of decline.

An Explanation of Age Trends in Problem Behavior

I propose a developmental and sociological approach to explaining age trends in problem behavior. The logic of the explanation derives in large part from lifestyle or routine activity theories in criminology (e.g., Cohen and Felson, 1979). This theoretical approach has turned criminologists' attention to the importance of opportunity in determining whether a crime will occur. This is the dominant approach to the study of victimization, where the emphasis is on circumstances which increase the risks of individuals being victimized. This reasoning is also relevant to explaining offending -- whether people will engage in problem behaviors (regardless of their legality). For people to engage in a problem behavior, they must have both the propensity and the opportunity to do so. Propensity would include whatever constellation of personal experiences and characteristics would make a person likely to engage in the behavior. Even given the propensity, however, people cannot engage in the behavior unless they enter a situation that gives them a reasonable opportunity of doing so.

This distinction is a central feature of Gottfredson and Hirschi's (1990) general theory of crime, which they intend to apply to the full range of deviant or problem behaviors. The contribution I hope to make is to show the relevance of this reasoning to age trends. This is a bit ironic because in doing so I am working to show that Hirschi and Gottfredson (1983) were incorrect in their earlier pronouncement that these age trends are beyond social explanation.

The set of circumstances that constitutes an opportunity is different for different problem behaviors. Research on victimization from burglary, for example, emphasizes the amount of time anyone is at home and the population density of the neighborhood (Cohen

and Felson, 1979). For many problem behaviors, such as precocious intercourse, smoking, getting drunk, and petty theft, opportunities would seem to be abundant and highly variable. I contend, however, that for most of the problem behaviors we study, opportunities vary greatly with age.

In the simplest sense, the opportunity to engage in these problem behaviors--to do these things "you're not supposed to do"--exists when a person is away from the observation of an authority figure and is not otherwise occupied in conventional, structured activity. Take smoking cigarettes for example. Adolescents will need to be out of sight of parents and teachers before they will feel free to smoke. To have some assurance that you won't be caught in the act, it would help a great deal to know that these adults are at least a few blocks away and that you have an hour or so of unobserved freedom. Furthermore, for adolescents to smoke on a regular basis, rather than in an isolated incident, they need even greater freedom of time, movement, and resources to go to a source where cigarettes can be bought or stolen.

My central hypothesis is that problem behavior varies with age because of social norms that children be given increasing independence as they grow older. I am speaking of independence in the sense of the amount of time and distance that a child or adolescent is permitted to spend outside the observation of adult authority figures. Age graded norms are undoubtedly a function of the growth of physical and cognitive capabilities. Last year, when my daughter was a year and a half old, I would not allow her to play in the back yard unless I went with her. This year I do, but I don't trust her alone in the unfenced front yard, by the street. She has enough self control and enough understanding of what she may do that I'm comfortable with her spending 20 minutes unsupervised in a safe setting--but I'm not confident that she would stay out of the street. Adults recognize that, as children grow older, they better understand the world around them, they have a growing capacity to judge what behavior will be acceptable in the eyes of adults, and they have greater self control to refrain from unacceptable actions. During childhood and adolescence, age

brings permission for greater time and distance away from adults. Later, adulthood will bring greater responsibility that again limits independence.

My framework predicts that, the youngest people who engage in a problem behavior, such as a seven year old who gets drunk, would both have a particularly strong propensity to do so (for whatever reasons--from family problems to low impulse control) and an exceptional amount of opportunity (being essentially unsupervised by parents). By the later years of high school, free time away from adults is abundant and adolescents are highly mobile. Thus, even youths with only a modest inclination toward violating norms may succumb to the temptation.

Evidence for the Hypothesis

Several lines of evidence bear on the plausibility of my hypothesis. The first issue is whether these opportunity factors are related to problem behavior. This is supported by work indicating that parental monitoring of children's activities is closely related to problem behavior (Cernkovich and Giordano, 1987; Larzelere and Patterson, 1990, and Loeber and Stouthamer-Loeber, 1986). At each age, those adolescents who are less closely supervised are more likely to engage in problem behavior. Thus, we see that there is an empirical link between this type of independence and problem behavior.

Also, relevant to this point is research that time spent socializing with peers in informal settings, away from adult supervision, is related to problem behavior. Several researchers have found a close relationship between problem behavior and socializing with peers (Agnew and Peterson, 1989; Hundleby, 1987; Jensen, 1986; Osgood and Wilson, 1990). The next table (item 5) shows some results from my own research in this area, with the follow-up sample from Monitoring the Future--a national sample followed from age 18 through 26. The first four activities entail informal socializing with friends. Both average rates over time and change over time in participation were associated with involvement in problem behaviors of illegal behavior, heavy drinking, marijuana use, heavy drinking, other drug use, and dangerous driving. The other assorted activities in the table either reflect

more structured, formal socializing or other domains of activity. None of those activities seemed to increase the rate of problem behavior, and in some instances they seem to decrease it.

The next type of evidence supporting my hypothesis is that these opportunity factors--independence from adult supervision and informal socializing with peers--vary with age, and the age differences are consistent with age trends in problem behavior. In this regard, there are a number of studies indicating that, as children approach adolescence, parents supervise their children less closely and spend less time with them (reviewed by McNally, Eisenberg, and Harris, 1991). In his beeper research on activities, Reed Larson has found that time spent with the family decreases from the 5th through 9th grades (Larson and Richards, 1991), and that adolescents spend considerably more time with friends and less time with their families than do adults (Larson and Bradney, 1988).

In my own research, I have examined age trends in the socializing activities (shown in the last table) for the national sample of 18 to 26 year olds and also for a sample of Nebraskans, age 18 through 95 (Osgood and Wilson, 1990; Osgood and Lee, 1991). Here are two figures showing the general trends (Items 6 and 7). Just look at the lines marked "before control." We see that teenagers socialize at a much higher rate than do adults at any age. Our analyses indicate that, after the period of increasing freedom in adolescence, entry into adult roles of marriage, work, and parenthood decrease involvement in unstructured socializing away from the home. Note that socializing increases again as the respondents' children leave the home, but by this time the risk of problem behavior seems to have evaporated.

The question that remains is whether the relationship between independence and problem behavior, combined with the similarity in their age trends, is sufficient to account for age trends in problem behavior. I have conducted a limited test of this with the same national data for 18-26 year olds. The results are encouraging. Controlling for amount of unstructured socializing (and a variety of other ordinary activities) reduces age trends in

the five problem behaviors, though it does not eliminate them altogether, and it is more successful for some problem behaviors than others (see Items 8 through 11).

Future Directions

The most important test of my explanation conduct similar analyses over a larger age span, particularly including later childhood and early adolescence. This will provide a stronger test of the degree to which age differences in opportunity factors account for age differences in problem behavior. I will be doing some analyses along these lines this summer in collaboration with Del Elliott, using the data from his National Youth Survey.

The approach I have adopted also suggests a few very diverse hypotheses that would be interesting to test. For instance, if it is only opportunity that restrains children from problem behavior, younger children should show particular high rates for whatever counter-normative behaviors are available to them. I suspect that there are relevant findings in the literature, though I have not yet found them. I strongly believe this to be true, however, on the basis of anecdotal evidence. Small children take things from one another and push one another endlessly when they are first physically able to do so. Of course, they do not do serious harm because they aren't very strong and because adults watch them closely.

Another avenue of research would be a closer analysis of age differences in norms and practices about what levels of independence are appropriate and granted to people at different ages. My hypothesis implies some very specific results in this regard. Cross-cultural comparisons would be interesting as well, and they might provide another area for testing the validity of the explanation.

Finally, it would be worthwhile to differentiate among problem behaviors. I have, in effect, treated all problem behaviors as equivalent. This is a function of not only my limited time here today, but my limited knowledge. From the first figures I showed you, it is apparent that the age trends for vary considerably among problem behaviors, despite their similarity at a global level. A more precise application of my opportunity based

explanation would call for an analysis of the social ecology of each of these behaviors to determine the specific conditions that surround them. This analysis would provide a basis for differentiating the opportunity factors relevant to each behavior, which should in turn yield better explanation of the age trends for that behavior.

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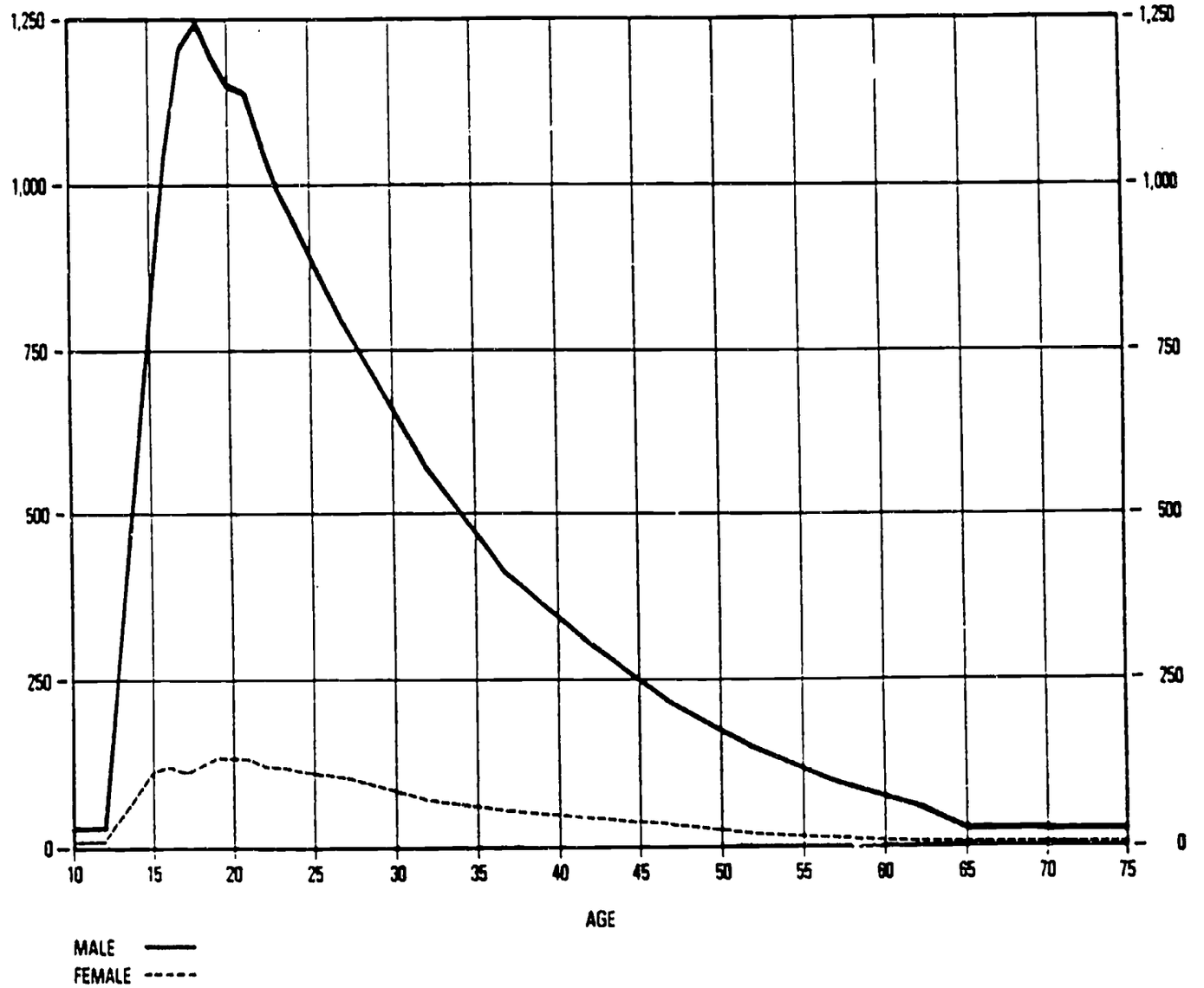
Figure 4.2 Age-specific violent crime arrest rate, by sex, 1983

NOTE: See NOTE, Table 4.1(82). For definition of violent crime, see Appendix 3.

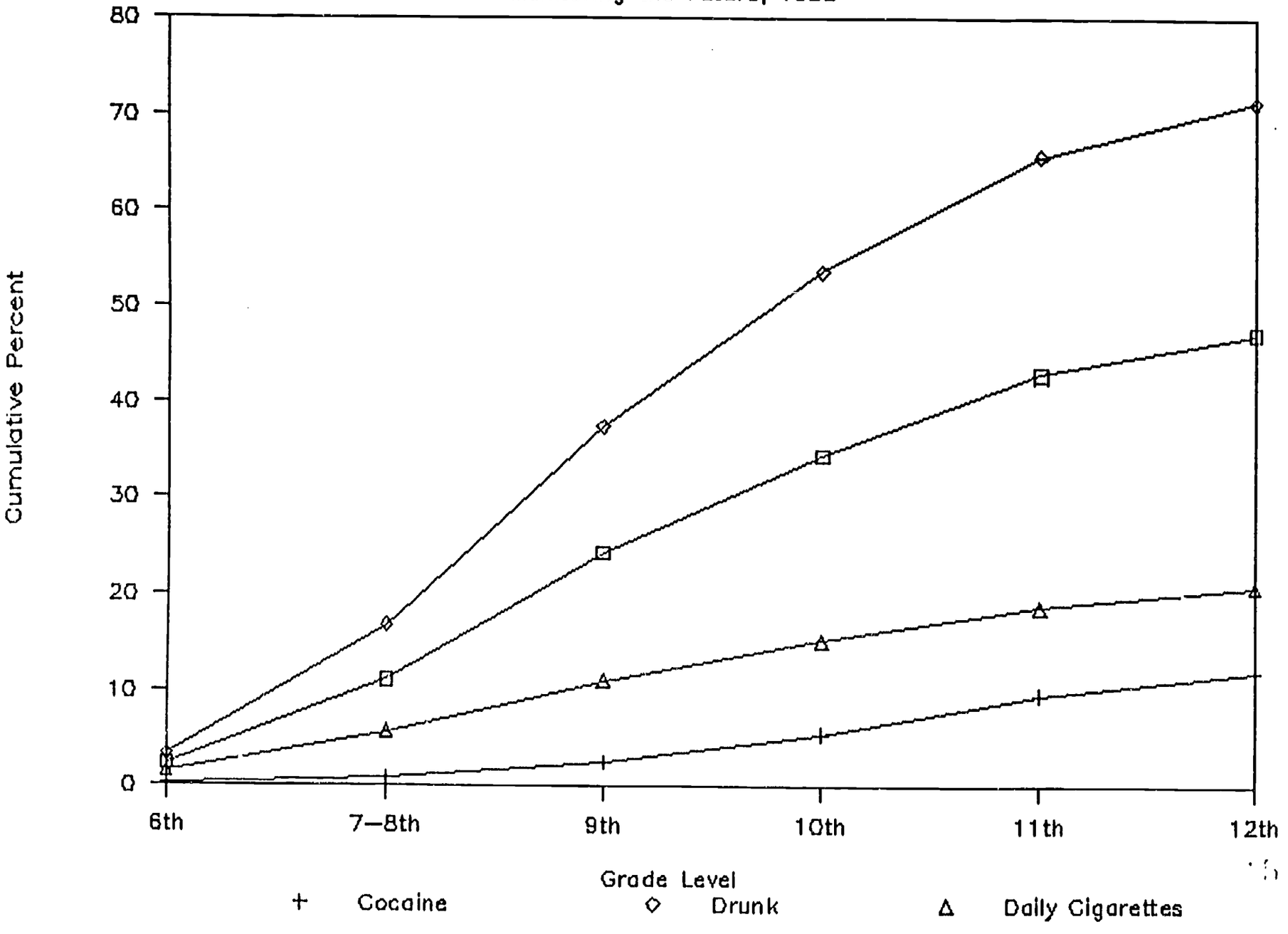
(Age-specific arrest rate: number of arrests per 100,000 inhabitants belonging to a prescribed age group)



Source: U.S. Department of Justice, Federal Bureau of Investigation, Crime in the United States, 1983 (Washington, D.C.: U.S. Government Printing Office, 1984), p. 346.

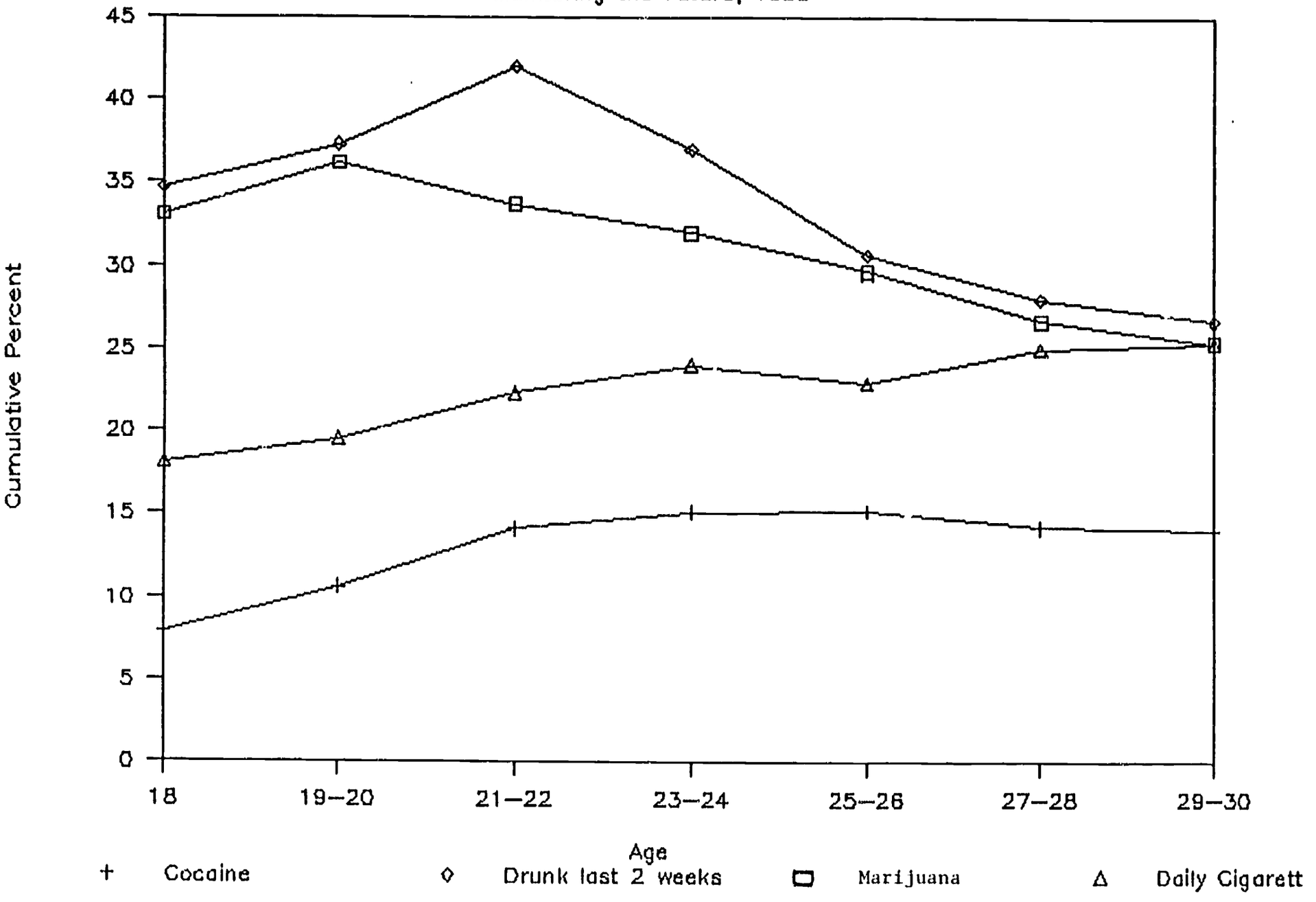
Grade Level and Lifetime Prevalence

Monitoring the Future, 1988



Age and Annual Prevalence

Monitoring the Future, 1988



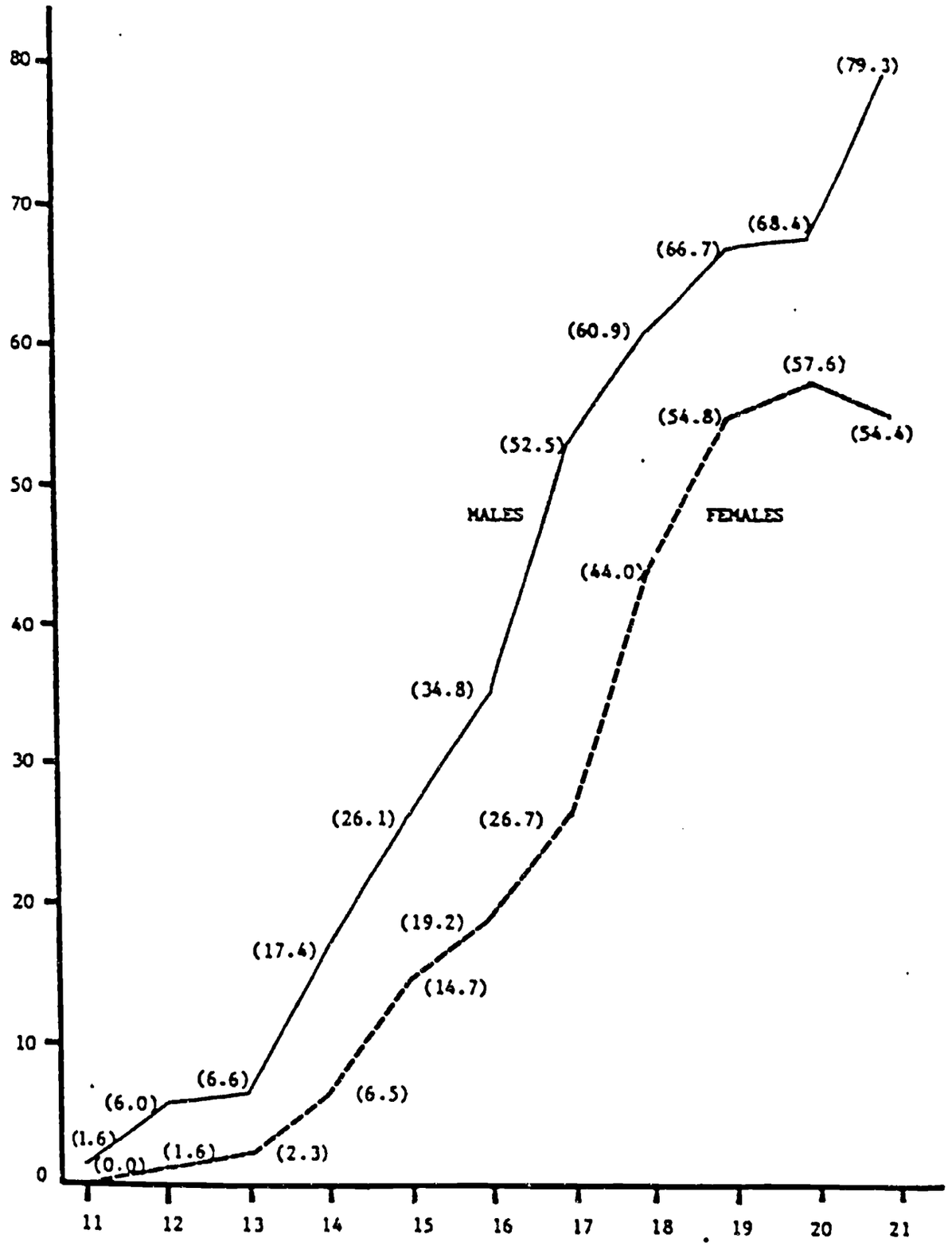


Figure 1: The Proportion of Youth Who Are Sexually Active by Age* and Sex
* Median age specific annual prevalence rates for study cohorts, 1976-1980.

the rate for females actually declines slightly, indicating that sexual involvement may peak for unmarried females at age 20 and that suspension of sexual activity exceeds initiation between ages 20 and 21 for females.

Table 3. Results from multiple regressions of activities and marijuana use.

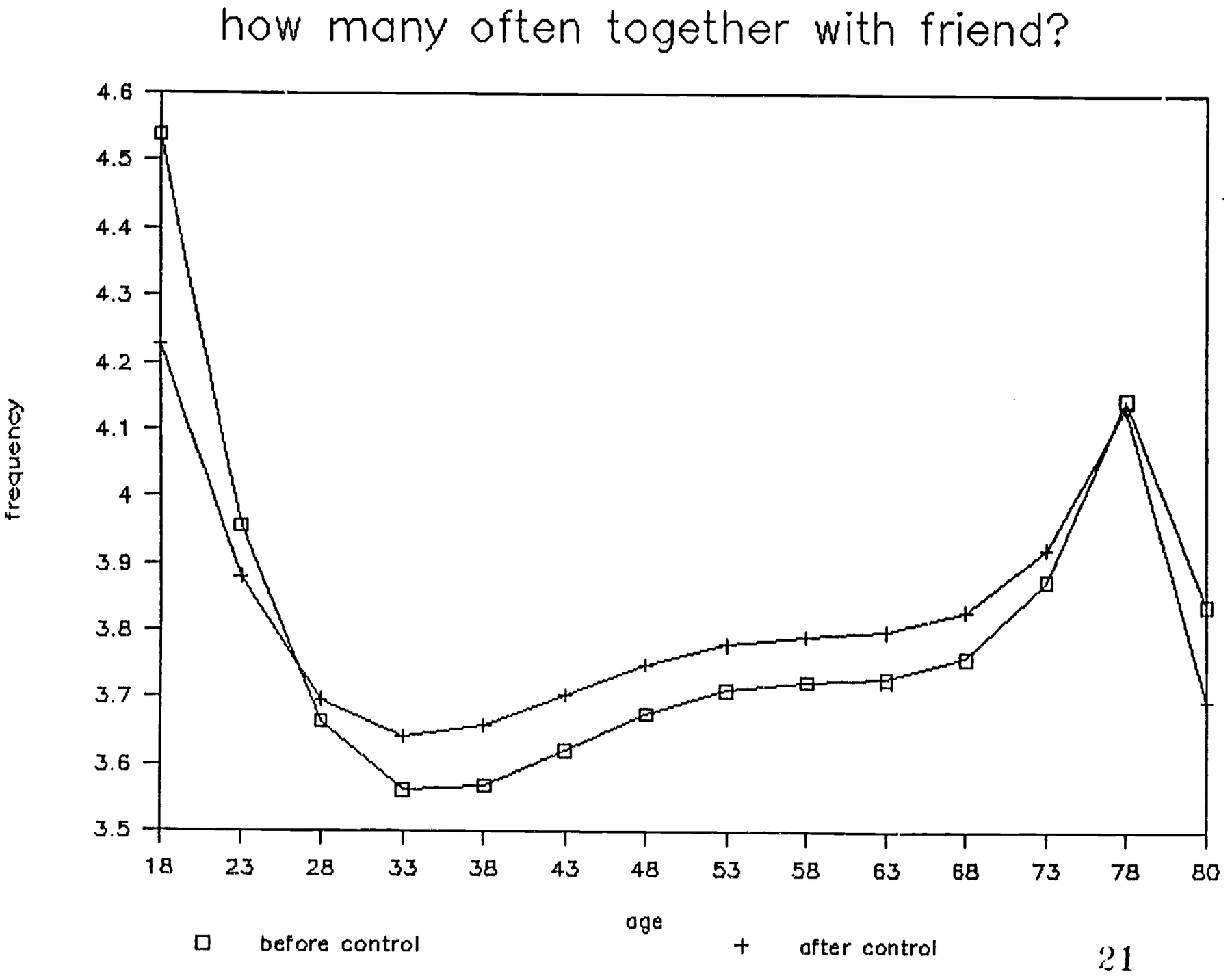
Activity	Marijuana Use: Analysis of Individual Means b	SE	r	Marijuana Use: Analysis of Individual Change b	SE	r
Ride for Fun	.228*	.074	.186*	.116*	.026	.151*
Visit with Friends	.610*	.134	.327*	.070*	.036	.154*
Go to Parties				.329*	.038	.219*
Females	.776*	.146	.362*			
Males	1.410*	.154	.421*			
Evenings Out	.301*	.091	.342*	.121*	.024	.177*
Go on Dates	.050	.065	.104*	-.031	.021	.040*
Go to Movies				-.016	.044	.069*
Females	-.396*	.185	.029			
Males	-1.038*	.204	-.082*			
Community Affairs	-.595*	.095	-.139*	-.086*	.033	.006
Active Sports				-.014	.027	.034*
Females	-.040	.089	.044			
Males	-.368*	.104	-.014			
Go Shopping				-.075*	.037	-.009
Females	-.933*	.173	-.101*			
Males	-.392*	.161	-.023			
Work Around House	.105	.091	-.073*	-.070*	.030	-.049*
Watch TV	.003	.119	-.032	-.096*	.042	-.070*
Relax Alone	.111	.087	.086*	.058*	.027	.056*
Read Book or Magazine	-.104	.102	-.009	-.037	.036	-.018
Play Music or Sing				-.041	.021	-.001
Females	-.085	.058	-.092*			
Males	.097	.069	-.003			
Creative Writing	.239*	.085	.040	.075*	.032	.081*
Arts and Crafts	.061	.067	.011	.022	.027	.040*

Unique Variance Explained	R^2	df	R^2	df
All Activities	.2280*	21	.0561*	16
First 4 Activities	.1738*	5	.0450*	4
Other Indep. Vars.	.0158*	10	.0077*	2
Design Controls	.0058	13		
Total	.3223*	44	.0829*	18

Mean	1.855	.000
S.D.	2.318	1.324
Possible Range	0-9	
N (weighted)	1273	4113

* $p < .05$

Note. The b's are unstandardized regression weights, and the SE's are their standard errors. In the analysis of individual change, the r's are zero-order correlations, and in the analysis of individual means they are partial correlations controlling for design factors. The R^2 values represent increments in explained variance, controlling for all other variables in the model. Separate coefficients are given for males and females only when there was a significant interaction with sex.


how many often together with friend?
4.6
4.5
4.4
4.3
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
frequency
18
23
28
33
38
43
48
53
58
63
68
73
78
80
age
before control
after control

how many evenings out per week?

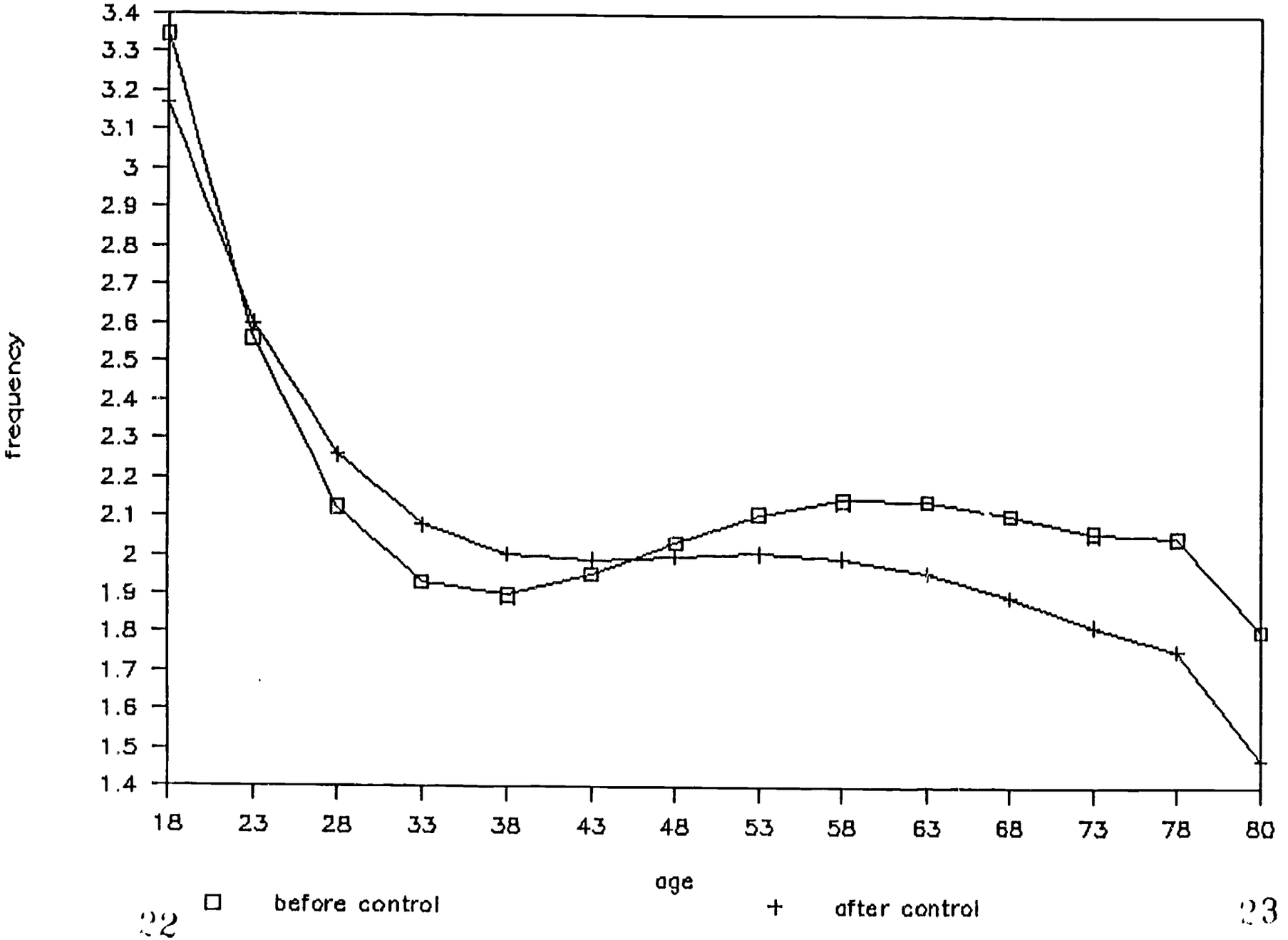


Table 7. The impact of controlling for activities on age trends in deviant behavior.

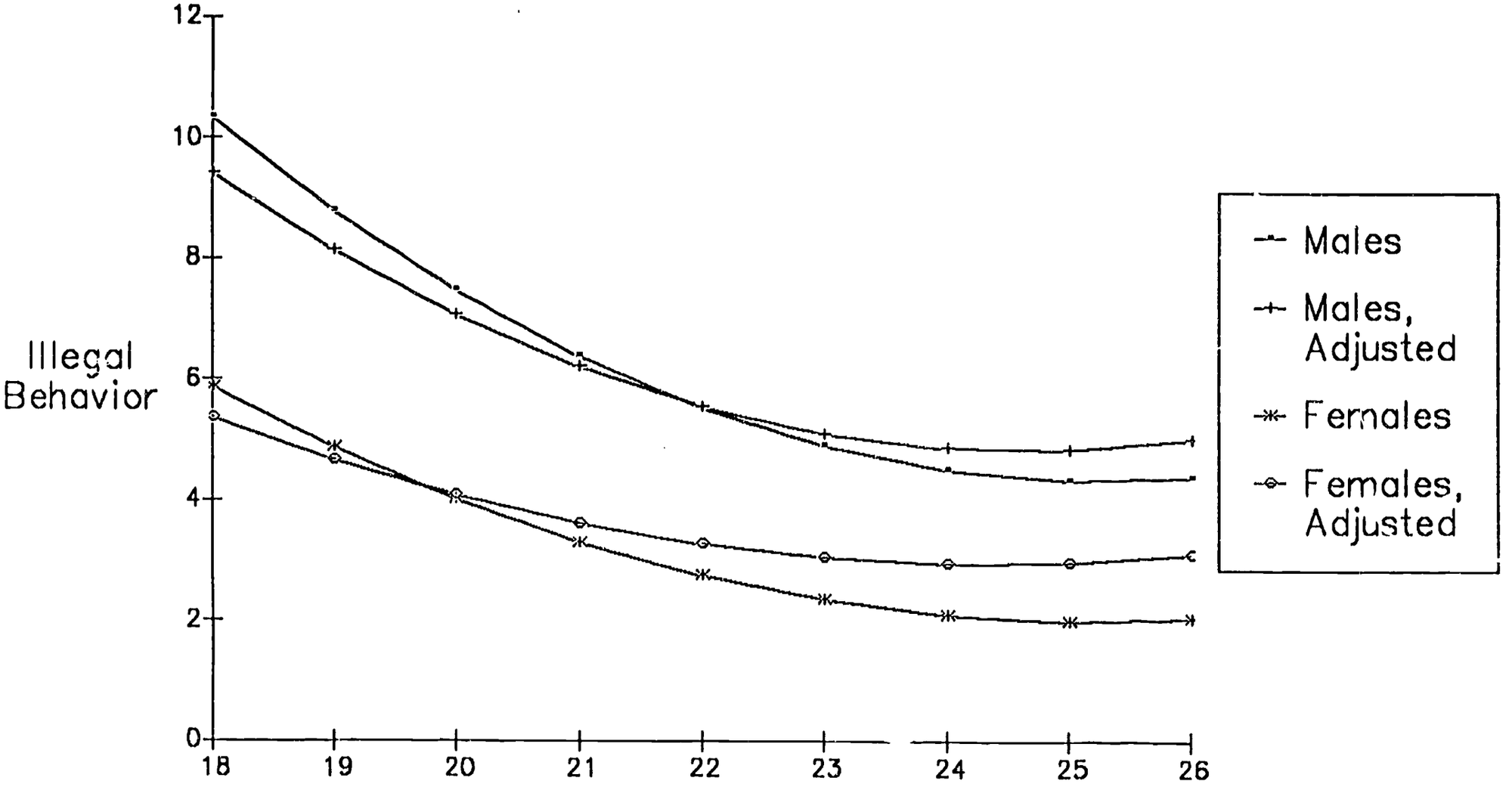
	Without Controlling for Activities			Controlling for Activities		
	b-Age	b-Age^2	R^2	b-Age	b-Age^2	R^2
Illegal Behavior			.1237*			.0431*
Females	-.479*	.0750*		-.283*	.0599*	
Males	-.744*	.1138*		-.551*	.1033*	
Heavy Alcohol Use	-.034*	-.0042*	.0091*	.012*	-.0060*	.0031*
Marijuana Use	-.095*	-.0171*	.0265*	-.030*	-.0210*	.0077*
Other Illicit Drug Use	.013	-.0470*	.0061*	.134*	-.0535*	.0134*
Dangerous Driving			.0294*			.0104*
Females	-.066*	.0113		-.022	.0133	
Males	-.274*	-.0038		-.202*	-.0066	

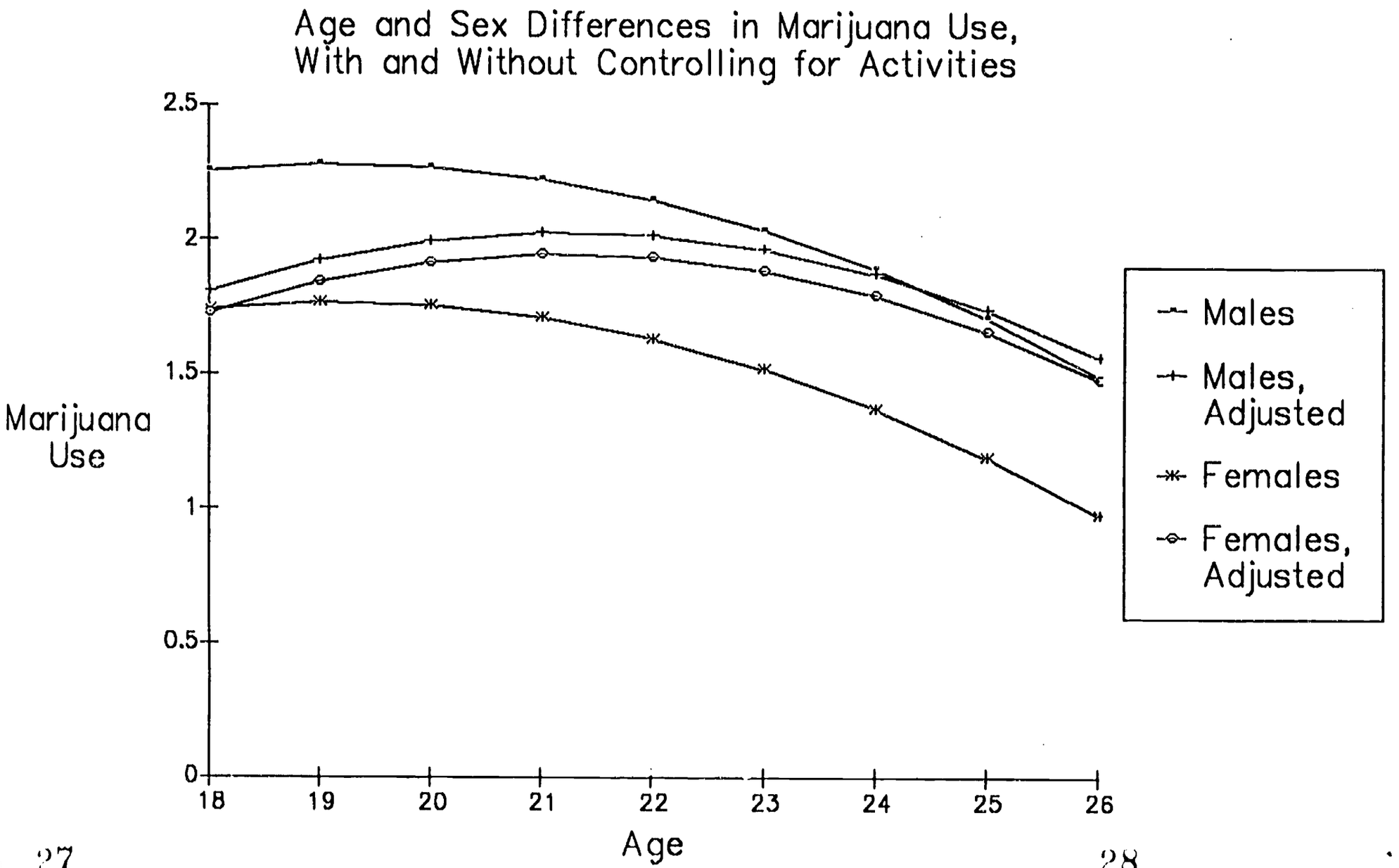
	Proportion Explained by Activities		
	b-Age	Age Trend	R^2-Age
Illegal Behavior			.647
Females	.409	.388	
Males	.259	.247	
Heavy Alcohol Use	.647	.519	.659
Marijuana Use	.684	.473	.709
Other Illicit Drug Use	-10.308	-.535	-2.197
Dangerous Driving			.646
Females	.667	.495	
Males	.263	.257	

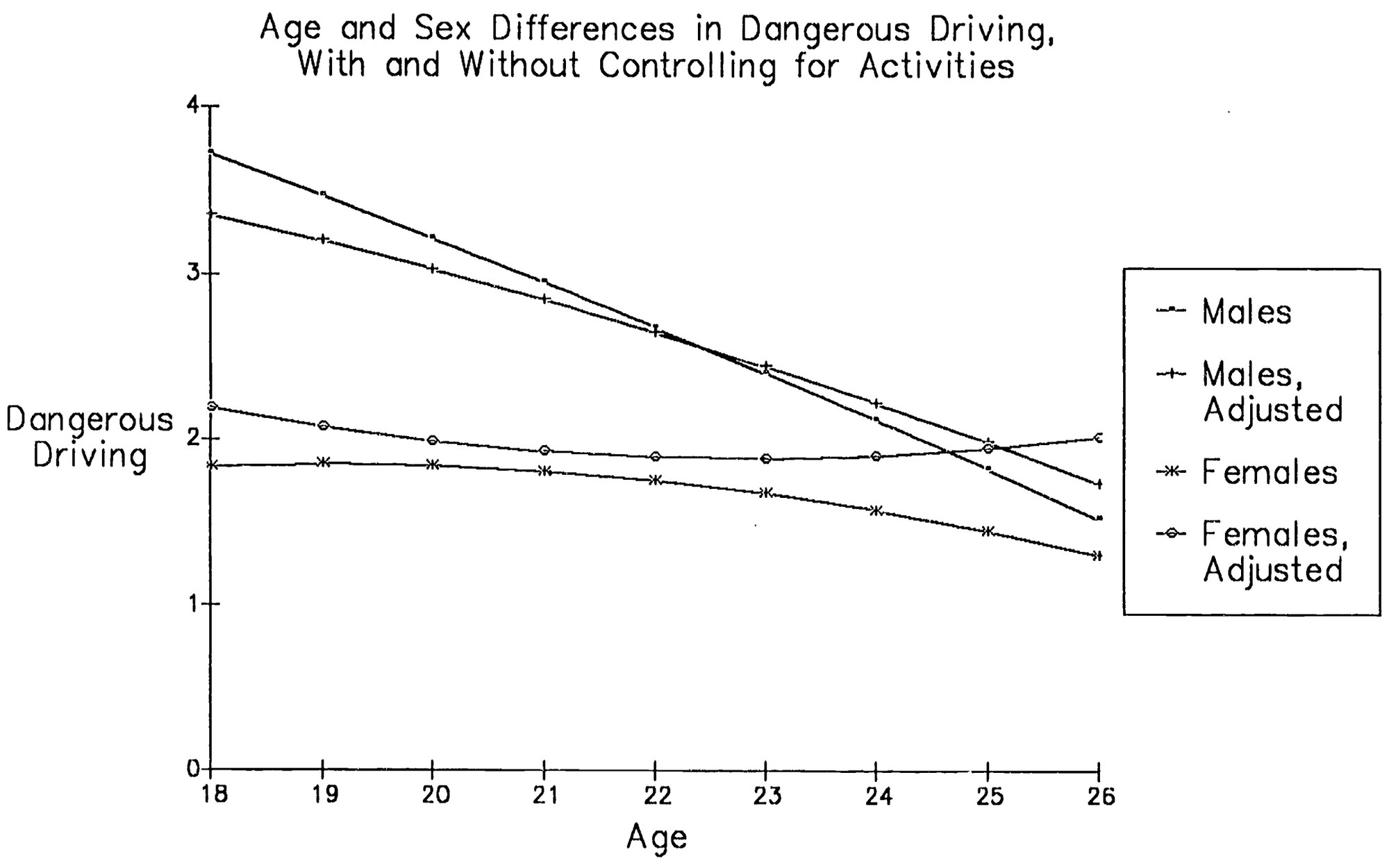
* $p < .05$

Note. These results are from analyses of individual change. The b's are unstandardized regression weights, and the SE's are their standard errors. The R^2 values represent increments in explained variance, controlling for all other variables in the model. Separate coefficients are given for males and females only when there was a significant interaction of age and sex.

Age and Sex Differences in Illegal Behavior, With and Without Controlling for Activities




Age and Sex Differences in Marijuana Use,
With and Without Controlling for Activities
Marijuana Use
2.5
2
1.5
1
0.5
0
18
19
20
21
22
23
24
25
26
Age
Males
Males, Adjusted
Females
Females, Adjusted


Age and Sex Differences in Dangerous Driving,
With and Without Controlling for Activities
Dangerous Driving
4
3
2
1
0
18
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23
24
25
26
Age
Males
Males, Adjusted
Females
Females, Adjusted