Guardians to Counter Adolescent Drug Use? Limitations of a Routine Activities Approach
Christopher Bratt
Youth Society 2008; 39; 385 originally published online Dec 13, 2007; DOI: 10.1177/0044118X07308071

The online version of this article can be found at:
http://yas.sagepub.com/cgi/content/abstract/39/3/385

Additional services and information for Youth & Society can be found at:

Email Alerts: http://yas.sagepub.com/cgi/alerts

Subscriptions: http://yas.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations http://yas.sagepub.com/cgi/content/refs/39/3/385
Guardians to Counter Adolescent Drug Use?

Limitations of a Routine Activities Approach

Christopher Bratt
Centre for Child and Adolescent Mental Health, Oslo, Norway

Based on suggestions made by routine activities theory and data from two surveys, the present study discusses the use of adult guardians as a means to counter drug use among adolescents who seek out unsupervised routine activities with peers. Two surveys with 13- to 15-year-olds were conducted 4 years apart in a Norwegian town (Ns = 1,455 and 1,552). Prior to the second survey, adult guardians (social workers and voluntary guardians) were introduced at places where teenagers tended to gather. The town experienced a remarkable reduction in adolescents’ use of alcohol and illegal drugs, in contrast to the general development in Norway. Routine activities theory would suggest that the introduction of guardians contributed to this development. Data did not support this suggestion. However, data indicated that guardians might result in a marginalization of users of illegal drugs. This article uses the example of drug use to point at limitations in a situational approach to counter youth delinquency.

Keywords: drug use; adolescence; routine activities theory; guardians

The present study investigated alcohol and drug use as well as smoking among two cohorts of young adolescents in a Norwegian town, assessed in 1999 and 2003, respectively. Whereas the general development in Norway from 1999 to 2003 showed increased substance use among adolescents, particularly alcohol use, data from the town of Drammen in Norway indicated a quite different development. According to self-reports, adolescents’ use of alcohol and other drugs was significantly reduced in this town. The object of the present study was to investigate whether the introduction of guardians in

Author’s Note: I wish to thank two anonymous reviewers for valuable comments on the first draft of this article.
self-governed youth activities was a likely explanation of this change in adolescents’ drug use.

Routine activities theory (a theory that stresses situational variables rather than individual psychology or social bonds) suggests that introducing guardians can reduce delinquency, including adolescents’ use of alcohol and other drugs. When testing this suggestion made by routine activities theory, the study went beyond an analysis of linear relationships as is sometimes used in similar studies. The analysis acknowledged the need to distinguish between the risk for being involved in the use of intoxicants (with many individuals having zero as their score) and the level of use.

**A Situational Perspective and Routine Activities Theory**

Adolescence is known to bring increased risk for becoming involved in problem behavior, including drug use. Several factors may contribute to teenagers’ substance use. These may in part be related to age-specific cognitive and emotional developments (Jack, 1986), a desire to gain privileges of the adult world that are denied to teenagers (Agnew, 2003), as well as limited social control during adolescence (Hirschi, 1969). Both the limited social control over adolescents and the denial of adult privileges point at situational variables, in contrast to individual explanations of adolescent delinquency.

Social control and social influences in general can be important. Parents continue to exercise some influence over their offspring when they reach adolescence; teenagers are usually more reluctant to experiment with drugs if they know their parents will intervene (e.g., Foxcroft & Lowe, 1991; Scheer, Borden, & Donnermeyer, 2000). Yet parents’ control on adolescents is limited; their influence is likely to operate primarily through teenagers’ choice of peers rather than directly (Bahr, Marcos, & Maughan, 1995; Warr, 1998). As a source of social influence, parents seem to come second to the influence exercised by peers (Allen, Donohue, Griffin, Ryan, & Turner, 2003), and older siblings are likely to be more important than parents (Boyle, Sanford, Szatmari, Merikangas, & Offord, 2001).

Parents become less important as guardians when youth withdraw from their parents and prefer socializing with other teenagers (e.g., Coleman, 1961; Conger & Rueter, 1996; Jessor & Jessor, 1977). Together with their peers, adolescents may develop a subculture with use of alcohol or other drugs as an integrated part (Paglia & Room, 1999). Frequent substance use among teenagers seems incorporated in a generally deviant adolescent subculture that may even include violent behavior (Bernburg & Thorlindsson, 1999; see also Kingery, Pruitt, & Hurley, 1992).
Thus, as pointed out by Hirschi (1969), the loss of adult guardianship during adolescence seems to provide a basis for youth delinquency. This loss might be counteracted by establishing a new kind of guardianship when adolescents seek out places where they can hang out with peers. This is an approach suggested by routine activities theory.

Routine Activities Theory

Routine activities theory was originally developed as a theory on crime (Cohen & Felson, 1979; Felson, 1987; Roncek & Maier, 1991), suggesting that three factors can explain the development of criminal behavior: the presence of motivated offenders, the presence of suitable targets, and the absence of suitable guardians. According to routine activities theory, the absence or presence of guardians should then be a crucial factor. For instance, a quasi-experimental study of violent crime (Braga et al., 1999) found that violent crime was reduced at places where police officers were introduced, contrary to places without such guardians. Noteworthy, Braga and colleagues concluded that violent crime did not relocate after the introduction of guardians, a substantial support to routine activities theory.

Osgood, Wilson, O’Malley, Bachman, and Johnston (1996) extended routine activities theory to explain delinquent behavior in general. Osgood and colleagues used longitudinal data and considered several delinquent behaviors among young adults: criminal behavior, dangerous driving, heavy use of alcohol, and use of different drugs. They concluded that young adults’ participation in routine activities with no authority figures present accounted for a substantial portion of the association between age, gender, and socioeconomic status on one hand and deviant behavior on the other hand.

Their suggestion was that different forms of delinquent behaviors should be understood as being consequences of everyday routine activities, with delinquency being dependent on opportunities rather than individual psychology or social bonds. Interestingly, the claim made in this article was stronger than the one put forward by one of the founders of routine activities theory. Whereas Marcus Felson (1986) acknowledged the importance of social bonds for the prevention of crime, Osgood and colleagues advocated a “strictly situational explanation of individual deviation that does not invoke individual characteristics, such as social bonds” (Osgood et al., 1996, p. 640). Furthermore, whereas Felson pointed out that “some people are inclined to break laws” (Felson, 1986, p. 120), Osgood and colleagues 10 years later suggested that the motivation for delinquency should be found in the act itself, along with situational variables.
Limitations and Strengths in a Situational Approach

Both the original version of routine activities theory and its extension into explaining delinquent behavior in general may suffer from an important limitation, as it cannot explain the origin of motivation. Routine activities theory does not explain how some individuals come to be motivated to behave in a criminal or delinquent manner. We need such an explanation, as there is considerable variation in peoples’ delinquent behavior, even when provided with an equal opportunity for delinquency.

For instance, only a few of the adolescents who frequently participate in out-of-home activities withdrawn from parents’ control actually get involved in use of illegal drugs. Equally, routine activities theory does not help us understand why some adolescents more than others are attracted to places where deviant behavior is likely to occur. In fact, the commonly accepted association between individuals’ drug use and similar behavior among peers might reflect that individuals with a readiness to experiment with drugs seek out peers who already use substances (Coggans & McKellar, 1994).

A situational approach cannot provide a sufficient explanation of delinquency. From a sociological perspective, social bonds appear important as a mediating variable between opportunities provided by routine activities and actual behavior of individuals (e.g., Bernburg & Thorlindsson, 2001; Kennedy & Baron, 1993). From a psychological perspective, individual traits can be critical for an individual’s risk to develop delinquent behavior. Sensation-seeking or risk-seeking traits (Greene, Krcmar, Walters, Rubin, & Hale, 2000; Newcomb, 1991; Pedersen, Clausen, & Lavik, 1989; Teichman, Barnea, & Rahav, 1989) are important predictors of delinquency, and these individual differences are linked to genetics. Particularly frequent use of drugs seems to have a genetic link (Glantz & Pickens, 1992; Rhee et al., 2003).

Thus, a strict situational approach can be criticized for disregarding the importance of individual psychology (including genetic influences) as well as social bonds. An additional and less discussed problem with routine activities theory is that it attempts to explain quite different behaviors within an identical theoretical approach.

Routine activities theory attempts to collect heterogeneous behaviors under one heading, either as delinquent or criminal behavior. Both these terms are social constructions, defined by the social norms and the written rules of a given society. For this reason, it may seem reasonable to suggest that the social influence by suitable guardians might help counter delinquent behavior. Still, the varying natures of different delinquent behaviors may be important.
For instance, Osgood and colleagues (1996) considered criminal behavior, dangerous driving, and various drug uses. Use of drugs is quite different from dangerous driving. The two behaviors have in common that they may depend on psychological traits such as risk-seeking or sensation-seeking (factors not accounted for by routine activities theory) as well as situational factors. But there are significant differences, such as the fact that repeated substance use easily results in dependency, with a physiological or psychological need for more of the same (Duffy & Milin, 1996; Kendler & Prescott, 1998; Stewart & Brown, 1995).

Although psychology and sociology can object to the simplistic view on the origin of delinquency, the strength in a routine activities approach may lie elsewhere than in its attempt to narrow the causal analysis of delinquent behavior. Participation in unsupervised routine activities is not a sufficient explanation of delinquent behavior, but in many cases it may be a necessary explanation of how individuals become involved in delinquent behavior and how frequently they demonstrate such behavior (see Osgood & Anderson, 2004). Apparently, routine activities theory would suggest that either reducing adolescents’ participation in unsupervised routine activities or introducing guardians should be sufficient to counteract delinquent behavior. Introducing suitable guardians may help counter violent crime (Braga et al., 1999). Guardians can also have an effect on people’s drinking behavior at bars (Fox & Sobol, 2000). The present study considered drug use among adolescents.

**Focus in the Present Study**

**Using Guardians Against Adolescents’ Drug Use**

The most interesting application of routine activities theory will involve suggestions as to how delinquent behaviors can be counteracted. The present study was intended to follow up on this perspective when investigating one of the behaviors considered by Osgood and colleagues (Osgood et al., 1996): drug use. The study investigated drug use among adolescents in a Norwegian town, based on two surveys. The town in question, Drammen, has a population of about 55,000 and nearly 2,000 adolescents in the target population for the present study (13 to 15 years old).

The first survey, conducted in 1999, suggested that relatively many adolescents in the town used alcohol or even illegal drugs, some of them frequently. Partly as a consequence of these findings, local authorities introduced guardians (social workers) where groups of teenagers tended to hang out in self-governed out-of-home activities.
Five social workers were used. On Fridays and Saturdays, social workers were out in the streets from early afternoon until 12 a.m., on Tuesdays and Wednesdays until 10 p.m. They were less present on Mondays (until 3 p.m.) and Thursdays (until 5 p.m.) and did not tour the streets on Sundays. About half of the time they concentrated on the town center, the rest on various other parts of the town, including parks where drug users might gather. According to the statistics maintained by the social workers, their presence on street level resulted in 5,045 talks with youth in 2003.

In addition to the efforts by social workers, the previous sparse activity of a few voluntary “night hawks” was significantly extended by inviting parents of youth between 12 and 16 years to be present at places where youth gathered for out-of-home activities. These night hawks started patrolling areas where teenagers tended to gather, in the beginning both on Fridays and Saturdays, then only on Friday evenings, that is, the evenings when many youth sought the streets. Night hawks toured places where adolescents gathered; in some cases, these guardians also visited home parties organized by teenagers when parents were absent.

The leader of the social workers was confident that their presence in the streets had reduced adolescent fighting. The present study investigated whether the guardians were likely to have exercised an effect on substance use among adolescents who sought the streets. It seemed reasonable to assume that the effects of guardians would be less clear for drug use than for fighting. Introducing guardians into some settings for self-governed out-of-home activities may reduce adolescents’ initial experimentation with drugs, yet it might have problems preventing repeated drug use if users have other places to go.

Teenagers who use drugs may seek out remote places for their substance use. This would imply the opposite causal direction than the one suggested by routine activities theory. The causal direction between seeking out unsupervised activities and substance use is important and will have consequences for preventive action: Should preventive action against adolescents’ drug use focus on situational variables, or should it try to influence psychological traits that may influence motivation, including motivation to seek out places to withdraw from adult control along with other adolescents? The two theoretical standpoints may even suggest different outcomes if guardians are introduced into settings where some teenagers tend to gather for unsupervised spare-time activities. Routine activities theory may indicate that drug use should be significantly reduced. Yet, if drug use is a cause for seeking out unsupervised activities to avoid social control, users can be expected to relocate to steer clear of the newly introduced guardians. Effects on actual use of drugs should then be very moderate.
Testing for Effects of Guardians

The present study tested a prediction derived from routine activities theory: Would the introduction of guardians at places where teenagers tended to gather reduce the association between adolescents’ participation in out-of-home activities and their use of drugs, including alcohol? (Persons below the age of 18 are not allowed to buy alcohol in Norway.) Routine activities theory explicitly states that the absence of guardians is an important predictor of delinquency; the presence of guardians should then make adolescents’ out-of-home activities less associated with drug use.

When testing associations between out-of-home activities and drug use, methodological care was necessary. A simple regression analysis of the association between routine activities and substance use may very well conclude that routine activities explain adolescents’ substance use. Still, such an analysis can be misleading. On an analytical level, we need to distinguish between (a) experimenting with substances and (b) the level or frequency of substance use. The analysis needed to consider associations between both of these dimensions of drug use and out-of-home activities.

Even use of a specific drug, such as alcohol or cannabis, should not be conceived as one behavior. This is captured by the words that are often used to characterize a person’s relation to legal drugs (including alcohol): nonuse, use, and abuse. Adolescents’ experimentation with substances to gain knowledge of their effects and frequent use of substances are two quite different behaviors. The difference between the two dimensions in the use of a specific substance is important, even though it may be overlooked by several studies. The two behaviors are different, as are their causes. Based on this distinction, the present study tested two hypotheses:

Hypothesis 1: Prevalence of having used drugs will be lower among frequent attenders of out-of-home activities in the second cohort (after the introduction of guardians), compared with their counterparts in the first cohort.

Hypothesis 2: There will be little evidence suggesting that guardians had any substantial effect on the level of drug use among users.

Method

Samples and Measurements

The study used two cohorts, based on one survey in the autumn of 1999 and one survey in the autumn of 2003, both of them conducted in the Norwegian town Drammen (with a population of about 55,000). All six
middle schools in the town participated, with Grades 8 to 10. Respondents completed the questionnaire at school under their teachers’ supervision; the same questionnaire was used for both cohorts. Only students with active consent from their parents were included, which reduced the response rates somewhat. In 1999 ($N = 1,455$) the sample represented 84.6% of the students in the 8th, 9th, and 10th grades; in 2003 ($N = 1,552$) the sample represented 77.0% of the students in these three school grades. Boys and girls were evenly represented (boys = 48.7% in the first cohort, 50.5% in the second cohort); mean age in 1999 was 13.9 ($SD = 0.93$), and mean age in 2003 was 13.8 ($SD = 0.92$).

With the response rates achieved, both surveys included the majority of the town’s teenagers who at the time of measurement were between 13 and 15 years old. The age group used for the present study is particularly interesting for prevention of drug use, as heavy users of substances typically start when they are between 12 and 14 years old (Paglia & Room, 1999).

The tendency to participate in out-of-home activities withdrawn from adult supervision was assessed with five items on spare-time activities: (a) hanging out on street corners or similar places; (b) staying out on the streets in the town center for extended periods; (c) visiting alcohol-free cafés; (d) visiting licensed discotheques, that is, discotheques with alcohol; and (e) playing slot machines (sometimes called fruit machines; in Norway, most supermarkets and many convenience stores with extended opening times have slot machines). Respondents were asked to report how many days during the past week they had performed each of the five activities. The five items (Cronbach’s $\alpha = 0.67$ in 1999 and $\alpha = 0.66$ in 2003) were first analyzed as being dependent on a latent variable of participation in out-of-home activities and then, due to needs in the statistical analysis, used to form an index. The index variable was computed as the sum of scores on the five items.

One part of the analysis recoded the index of out-of-home activities into an ordinal variable with five values. This recoded variable was used to investigate five subsamples separately, based on their level of (reported) participation in out-of-home activities. (Score 0 on the out-of-home index was used unchanged for the ordinal variable; the additional four groups in the ordinal recoding had scores 1-2, 3-5, 6-10, and 11-35 on the index variable.) Most of the adolescents belonged to the subsample with 0 as their score (proportions are reported later in Table 1). Subsamples with frequent participation in out-of-home activities were more dominated by boys; for example, the subsample with highest participation in out-of-home activities consisted of 64.6% boys in 1999 and 71.1% boys in 2003. Age was more evenly distributed among the
five subsamples formed by level of participation in out-of-home activities. For instance, in 1999 the mean age for the subsample with no reported participation in out-of-home activities was 13.8, whereas the mean age for the sample with highest participation in out-of-home activities was 14.0.

Several items in the questionnaire assessed alcohol consumption, but in 2003 the questionnaire was modified somewhat by adding a new item, “alcopops” (flavored alcoholic beverages), after these had been introduced in Norwegian supermarkets the same year. For the benefit of comparison of the two cohorts, the present study relied on the final two items on alcohol consumption. Respondents were asked if they had been drunk after the start of the autumn term, that is, during the past 5 weeks. Respondents answering yes were asked to indicate how many times they had been intoxicated. Claimed alcohol intoxication more often than once a day was recoded as missing data because it was unclear whether these answers indicated frequent use or just “playing bad” (this recoding affected 18 individuals in 1999 and 33 individuals in 2003).

The questionnaire assessed use of drugs other than alcohol with items that asked for specific drugs such as cannabis, amphetamine, ecstasy, GHB, cocaine, LSD, and heroin. The present study focused on one item: use of cannabis (hashish) as using an illegal drug. According to self-reports, cannabis was the most frequently used illegal drug (a finding that reflects tendencies in many countries; e.g., Egginton & Parker, 2002) and few respondents claimed use of other illegal drugs without also claiming use of cannabis. The respondents were asked to indicate how often they had used cannabis during the past year. Answers indicating use of cannabis more often than once a day (scores above 365) were recoded as missing data (in total, this affected 5 individuals from the two samples).

The analysis also considered smoking to compare results for drug use with results for tobacco use. Smoking was assessed with two items, one asking whether respondents did smoke (every day, sometimes, such as at parties, or never), the second asking how many cigarettes daily smokers smoked on a regular day.

Analysis

The analysis compared two cohorts; one cohort from before and one cohort from after adult guardians were introduced. While comparing cohorts from 1999 and 2003, the analysis considered the proportions that claimed to smoke daily, to have been intoxicated by alcohol, or to use cannabis. Mean
scores for the frequency of use were also considered, limited to those who reported to smoke daily, to have experienced alcohol intoxication, or to have used cannabis. This simple comparison of the cohorts grouped respondents from each sample into subsamples based on their level of participation in out-of-home activities. A separate part of the analysis applied the index variable of out-of-home activities and used regression techniques that can account for zero-inflated count data: zero-inflated Poisson regression.

Prior to the analysis investigating the two dimensions in substance use (use and level of use), a SEM-based approach was applied to test the magnitude and the significance of cohort differences. This analysis utilized the ability of the model-fitting software Mplus (Muthén & Muthén, 2004) to combine confirmatory factor analysis (estimating participation in out-of-home activities as a latent variable) with latent class analysis (experimentation with substances).

Results

Significant Differences Between the Two Cohorts

A model that used a latent variable of out-of-home activities and a latent class of experimenting with substances (based on dichotomous variables of daily smoking, alcohol intoxication, and cannabis use as indicators) was successfully estimated with Mplus version 3.1, using WLSMV estimation. The model presented in Figure 1 provided acceptable fit for the heavily skewed data with high inter-item correlations. (Comparative Fit Index [CFI] and Tucker-Lewis Index [TLI] = 0.97; Root Mean Square Error of Approximation [RMSEA] = 0.07; N = 2,543; as indicated in the figure, the measurement model of out-of-home activities needed an autocorrelation between two closely related indicators that followed after each other in the questionnaire.) The model estimated the latent class of substance users as dependent on two variables—the latent variable of out-of-home activities and the dichotomous variable of belonging to the second cohort. The estimated negative effect of belonging to the second cohort (−0.52) was statistically significant (SE = 0.069).

The initial analysis thereby suggested that differences in substance use between the two cohorts (estimated as a latent class of being user of substances) could not be attributed only to reduced participation in out-of-home activities in the second cohort. There was a significant reduction in substance use independently of the frequency of out-of-home activities. The following
The analysis investigated whether adult guardians were likely to have reduced the risk associated with self-governed out-of-home activities among adolescents.

**Results From Cross-Tabulation**

The next step in the analysis, presented in Table 1, applied a quite simple method. The five items for out-of-home activities were first used to form a total score. This index variable was then recorded into five categories, providing an ordinal variable. Table 1 compares the two cohorts from 1999 and 2003 with respect to reported smoking, alcohol intoxication, and cannabis use. The intention with this cross-tabulation was to investigate two issues: (a) Would the association between out-of-home activities and dichotomous variables of substance use be reduced in the second cohort, compared to the first? and (b) How would the level of substance use and participation in out-of-home activities be related in the two cohorts? Smoking was mainly used as a reference variable for alcohol intoxication and cannabis use; large effects from guardians on smoking did not seem likely.
Use versus nonuse. Data indicated substantial reductions in smoking, alcohol intoxication, and cannabis use from the first to the second cohort. If reduction in substance use was an effect of the introduction of guardians at unsupervised routine activities, then we should expect reduced use among those who participated in the out-of-home activities assessed, less so among adolescents who stayed away from these arenas.

As shown in Table 1, the survey from 2003 indicated reduced prevalence of substance use (percentages who reported to have used a substance) in all five subsamples formed by scores on the index of out-of-home activities, including the subsample that had zero as their score on the index of out-of-home activities. Cannabis use provided a specific case; here the strongest

| Table 1 |
| Reported Smoking, Alcohol Intoxication and Use of Cannabis in the Two Cohorts, Dependent on Scores on an Index of Out-of-Home Activities ($N = 1,407$ in 1999; $N = 1,500$ in 2003) |

<table>
<thead>
<tr>
<th>Scores on Out-of-Home Index</th>
<th>1999: Cohort 1</th>
<th>2003: Cohort 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Users</td>
<td>M Among Users</td>
</tr>
<tr>
<td>Daily smoking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.6</td>
<td>11.63</td>
</tr>
<tr>
<td>1–2</td>
<td>4.9</td>
<td>8.17</td>
</tr>
<tr>
<td>3–5</td>
<td>17.7</td>
<td>7.92</td>
</tr>
<tr>
<td>6–10</td>
<td>33.3</td>
<td>9.02</td>
</tr>
<tr>
<td>11–35</td>
<td>50.0</td>
<td>9.50</td>
</tr>
<tr>
<td>Total</td>
<td>10.1</td>
<td>8.80</td>
</tr>
<tr>
<td>Been drunk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>4.7</td>
<td>3.17</td>
</tr>
<tr>
<td>1–2</td>
<td>8.4</td>
<td>3.21</td>
</tr>
<tr>
<td>3–5</td>
<td>25.9</td>
<td>3.25</td>
</tr>
<tr>
<td>6–10</td>
<td>40.2</td>
<td>4.65</td>
</tr>
<tr>
<td>11–35</td>
<td>58.3</td>
<td>5.85</td>
</tr>
<tr>
<td>Total</td>
<td>14.7</td>
<td>3.94</td>
</tr>
<tr>
<td>Used cannabis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.2</td>
<td>9.00</td>
</tr>
<tr>
<td>1–2</td>
<td>2.8</td>
<td>15.00</td>
</tr>
<tr>
<td>3–5</td>
<td>8.6</td>
<td>12.32</td>
</tr>
<tr>
<td>6–10</td>
<td>14.4</td>
<td>5.42</td>
</tr>
<tr>
<td>11–35</td>
<td>33.3</td>
<td>47.63</td>
</tr>
<tr>
<td>Total</td>
<td>5.3</td>
<td>18.47</td>
</tr>
</tbody>
</table>
reduction was found in the subsamples who had either zero or the highest scores on the out-of-home index.

Thus, reported prevalence of drug use suggested a general reduction, not primarily among subgroups who were likely to have been directly affected by guardians at arenas for out-of-home activities. An alternative approach for investigating effects of guardians was to focus on those who reported to use drugs and to look for possible changes in the level of drug use after guardians had been introduced.

Level of substance use. The number of cigarettes smoked by smokers (mean of reported frequency among daily smokers) was reduced from 1999 to 2003 among those never or seldom attending out-of-home activities, but not among those with high scores on the index of out-of-home activities. Mean values for the frequency of alcohol intoxication among those who had been drunk was generally reduced from 1999 to 2003; yet again, this reduction was not found among respondents with very high scores on the index of out-of-home activities.

Results for cannabis use were the opposite. The reported level of cannabis use among those who claimed to use cannabis was considerably higher in 2003 for all subsamples except for one—those with very high scores on the index of out-of-home activities.

Results From Zero-Inflated Poisson Regression (ZIP)

The final analysis made use of Poisson regression (conducted with Mplus 3.1) to investigate developments for alcohol intoxication and cannabis use. Poisson regression is intended to analyze count data and questions as the two forming the basis for Table 1: effects on (a) substance use versus nonuse and (b) the level of use. Poisson regression predicts membership in one of two latent classes (in our case, corresponding to use or nonuse of a specific drug) as well as growth in the dependent, from zero and upward. As the present data had a preponderance of zeros (which is to be expected for drug use among adolescents), the analysis applied ZIP.

The ambition for this final step in the analysis was modest; it was intended to provide an alternative to Table 1, investigating whether ZIP regression suggested that the link between out-of-home activities and drug use had been weakened after the introduction of guardians. The ZIP analysis distinguished between girls and boys.

Use versus nonuse. The statistical association between out-of-home-activities and having experienced alcohol intoxication was moderately reduced for
<table>
<thead>
<tr>
<th></th>
<th>Cannabis Use</th>
<th>Alcohol Intoxication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Probability for Being a Nonuser</td>
</tr>
<tr>
<td>Girls</td>
<td>1999</td>
<td>723</td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>746</td>
</tr>
<tr>
<td>Boys</td>
<td>1999</td>
<td>662</td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>732</td>
</tr>
</tbody>
</table>

Note: Condition numbers provide information on the quality of the estimations.
*p < .05. **p < .01.
both genders (a finding less evident in the previous cross-tabulation and in accordance with Hypothesis 1). However, ZIP analysis suggested a strengthened association between out-of-home activities and being a user of cannabis in the second cohort (contradicting Hypothesis 1). For boys, this difference was only minor (from –.96 to –1.00, with negative values as Poisson regression estimates the probability for not being a user), but data indicated that this difference might be more substantial among girls (from –1.08 to –1.56, however, with \( p > .05 \) in 2003). This tendency differed from the results in the previous cross-tabulation; no increase in the association between out-of-home activities and being a user of cannabis was evident in the cross-tabulation based on an ordinal recoding of the index of out-of-home activities (see Table 1).

**Level of use.** Analysis with ZIP suggested that the second cohort had a stronger association between out-of-home-activities and alcohol users’ frequency of alcohol intoxication, compatible with Hypothesis 2. Hypothesis 2 had predicted that data would not indicate that guardians had contributed to reduced level of use among users. Findings in the previous cross-tabulation suggested that the increased association of alcohol intoxication with out-of-home activities was mainly due to changes in the small subsample of very frequent attenders of the routine activities assessed.

Results for cannabis use were more complex. For girls, no statistically significant association between out-of-home activities and level of cannabis use was evident (this was partly due to very low use; in the second cohort, only 2.1% of the girls claimed use of cannabis and only 0.7% claimed use more often than twice). Results for boys went from a positive association in the first cohort (0.507) to a negative association between out-of-home activities and the level of cannabis use in the second cohort (–0.447).

Thus, the linear analysis with ZIP suggested that the second cohort had a negative association between participation in out-of-home activities and the frequency of cannabis use. The previous cross-tabulation helped understand this result. Cross-tabulation indicated quite different results for (a) subsamples with low scores on out-of-home activities and (b) the small subsample with very high scores on this scale. Following the introduction of guardians, cannabis users with moderate scores on the out-of-home index reported higher level of cannabis use than a similar subsample had done in the previous survey. In contrast, the few cannabis users with very high scores on the out-of-home index reported lower level of cannabis use than a similar subsample had done prior to the introduction of guardians.
Discussion

The present study investigated possible effects of adult guardians on drug use among adolescents participating in self-governed out-of-home activities. Adolescents tend to withdraw from parents to the benefit of peers (Conger & Rueter, 1996; Jessor & Jessor, 1977), which increases the opportunity to become involved in delinquent behavior. Introducing adult guardians at places where teenagers gather during nonschool hours might then be an easy and cost-effective means to counteract delinquent behavior among teenagers. The object of the present study was to consider whether this might be true even for drug use. The study compared two cohorts of adolescents, investigating whether the link between out-of-home activities and drug use was weaker after the introduction of guardians. The analysis accounted for the need to distinguish between (a) use versus nonuse and (b) the level of use.

The town studied had a remarkable reduction in adolescents’ drug use, probably in part an effect of youth’s reduced participation in out-of-home activities. Although this particular finding provides support to routine activities theory, the causes for reduced participation in out-of-home activities fall beyond the scope of routine activities theory, pointing at limitations in a strict situational approach for understanding delinquent behavior.

Data did not indicate that guardians provided any substantial contribution to reduced drug use by weakening the link between out-of-home activities and drug use. Reduction in reported drug use was found even among those who did not participate in out-of-home activities where guardians were introduced. Furthermore, whereas ZIP suggested a minor reduced association between out-of-home activities and having experienced alcohol intoxication, the opposite was true for its estimation of being a cannabis user (higher association in the second cohort, after the introduction of guardians). In addition, ZIP estimated alcohol users’ frequency of alcohol intoxication to be more strongly associated with out-of-home activities in the second cohort, after guardians had been introduced.

Particularly interesting were the results for the frequency of cannabis use. These results indicated that guardians might have an unwanted effect on drug users’ behavior. Generally, users of cannabis appeared to use cannabis more often in 2003 than users had done in 1999 (possibly as a result of being recruited from a smaller and thus different subpopulation than users in 1999). However, this increase was not found among the few who, according to self-reports, very often attended those out-of-home activities where guardians had been introduced. As a consequence, ZIP estimated a negative effect of
participating in those out-of-home activities assessed on users’ level of cannabis use in 2003. It was among those who apparently less frequently attended out-of-home activities assessed that data indicated increased use in 2003 (the second cohort). A possible explanation of this result is that individuals with frequent use of cannabis withdrew somewhat from normal arenas for out-of-home-activities among adolescents. For instance, in the town studied, they might seek the nearby woods to avoid adult guardians when taking drugs. Such behavior might explain why high level of cannabis use went along with no or moderate participation in the out-of-home-activities assessed.

Data thus indicate that using adult guardians at places where teenagers tend to hang out might bring about a further marginalization of users of illegal drugs. The minority of drug users may find that they have to seek out new places, withdrawing even from other adolescents when trying to avoid adult guardians. Theoretically, such a marginalization might result in increased drug use among those who already use drugs, due to reduced contact with and reduced influence from nonusers.

It was impossible for the present study to test whether a potential marginalization might have contributed to the increased use of cannabis among respondents who reported to use cannabis. Increased level of cannabis use among users (as opposed to reduced frequency of alcohol intoxication among those who reported intoxication by alcohol) may simply have been an effect of the fact that cannabis users in the second cohort were different from cannabis users in the first cohort. There were significantly fewer users in the second cohort, and the group of users in the second cohort may have been more dominated by individuals who psychologically were at high risk for developing frequent use.

Because introducing guardians might lead to a relocation of drug users, this example points at the need to consider the different natures of various delinquent behaviors, an aspect that Osgood and colleagues’ (1996) variant of routine activities theory attempts to avoid. As a delinquent behavior, drug use can be quite different from dangerous driving or violent criminal behavior. In spite of strong correlations for instance between violence and substance use among adolescents (e.g., Bratt, 2004; Bernburg & Thorlindsson, 1999; Kingery et al., 1992), various delinquent behaviors are different in their nature and may require different forms of preventive action. Drug use neither depends on suitable targets (contrary to criminal offence against another person) nor on roads with little police control (contrary to dangerous driving). Drug users have many options for relocating if they want to continue using drugs.
Future research may look into gains and losses due to possible marginalization of drug users when guardians are introduced into settings where adolescents try to withdraw from parental control. Guardians can provide different forms of assistance for drug users, though possibly they will have problems counteracting drug use. If marginalization of users occurs, the situation for adolescent drug users is likely to worsen. However, a marginalization of users when they withdraw from the company of other teenagers might imply that users are less likely to tempt or seduce nonusers into experimenting with drugs. It should also be noted that drug use is as much a question of supply as it is a question of demand for drugs: guardians introduced where teenagers tend to gather might to some degree counter the efforts of pushers or dealers who try to seduce teenagers into experimenting with drugs.

In sum, the present study does not provide any support to routine activities theory beyond the well-established knowledge that adolescents’ unsupervised routine activities are associated with increased risk for being involved in delinquent behavior, including drug use. Guardians were not likely to have had a substantial preventive effect on drug use by reducing the risk associated with self-governed out-of-home activities, even though drug use was significantly reduced from the first to the second cohort. At the same time, the introduction of guardians went along with increased (reported) level of cannabis use among users.

The reason for the general reduction in drug use probably lay elsewhere than in isolated achievements by adult guardians. One cause was apparently less frequent participation in self-governed out-of-home activities in the second cohort. By itself, this reduced participation in out-of-home activities was an interesting finding. Historical events unknown to us may have contributed to this change; local authorities could not point out specific events or interventions that might have caused this change. It is possible that adult guardians made some youth less interested in participating in the common arenas for youth’s out-of-home activities, yet it seems less likely that the introduction of presumably friendly adult guardians made ordinary youth reluctant to participate in out-of-home activities and motivated them to stay at home.

Concluding, we may state that a strict situational approach for prevention of drug use among adolescents is likely to lead us astray. Other factors than situational variables are crucial, though being together with peers and without guardians present is an important factor for how adolescents come to experiment with drugs. The risk for becoming involved in substance use cannot be adequately explained by situational factors alone; substance use varies between individuals, dependent both on genetic factors (e.g., Rhee...
et al., 2003), social competence (e.g., Hover & Gaffney, 1991; Webster, Hunter, & Keats, 1994), and peers (Allen et al., 2003). According to the present study, guardians may even be unable to counteract substance use among existing drug users, partly because it will be impossible to have guardians present everywhere where adolescents might gather to avoid the supervision of adults when using substances.

Notes

1. According to the Norwegian Institute for Alcohol and Drug Research (http://www.sirus.no).
2. When samples from 1999 and 2003 were merged, 36 persons claimed use of amphetamine, of which only 4 did not claim use of cannabis. Five out of the 28 persons claiming use of ecstasy did not claim use of cannabis, 11 out of the 20 persons claiming use of GHB did not claim use of cannabis, 17 out of 37 persons claiming use of cocaine did not claim use of cannabis, 15 out of 23 persons claiming use of LSD did not claim use of cannabis, and 15 out of 25 persons claiming use of heroine did not claim use of cannabis.

References


Christopher Bratt has his PhD in sociology and currently works as a researcher at the Centre for Child and Adolescent Mental Health. His main research interests are in the areas of intergroup relations, integration of minority youth, and problem behavior among adolescents.