

How Safe Are Trick-or-Treaters?

An Analysis of Child Sex Crime Rates on Halloween

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States, municipalities, and parole departments have adopted policies banning known sex offenders from Halloween activities, based on the worry that there is unusual risk on these days. The existence of this risk has not been empirically established. National Incident-Base Reporting System crime report data from 1997 through 2005 were used to examine daily population adjusted rates from 67,045 nonfamilial sex crimes against children aged 12 years and less. Halloween rates were compared with expectations based on time, seasonality, and weekday periodicity. Rates did not differ from expectation, no increased rate on or just before Halloween was found, and Halloween incidents did not evidence unusual case characteristics. Findings were invariant across years, both prior to and after these policies became popular. These findings raise questions about the wisdom of diverting law enforcement resources to attend to a problem that does not appear to exist.

Keywords: *child sexual abuse; sex offenses; Halloween; National Incident-Base Reporting System; NIBRS; policy and law*

During the past two decades, various sex crime policies, including registration, community notification, and residence restrictions, have been implemented to prevent and deter sexual violence against children. The newest trend in this effort has been to prohibit known sex offenders from engaging in holiday festivities, particularly on or around Halloween. In previous generations, urban myths about

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Halloween warned of tainted or poisoned candy, and parents were advised to check for apples with razor blades tucked inside, despite no verification that such incidents ever occurred (Glassner, 1999). Now parents are urged to be wary of potential sexual predators handing out candy and to check their local sex offender registries to find the addresses of homes to be avoided.

Several states have passed laws or enacted local regulations restricting known sex offenders' activities on Halloween (O'Connor, 2005). In some New York counties, for example, sex offenders on probation are required to attend a 4-hour education program on Halloween night. In New Jersey, New York, Virginia, Wisconsin, California, South Carolina, and North Carolina, curfew policies prohibit registered sex offenders from going out or opening their doors on Halloween (Wood, 2006). New Jersey sex offenders caught giving out candy are considered in violation of probation and face up to 3 years in jail. In Tennessee, sex offenders on probation are banned from Halloween costume parties and cannot put up decorations, and in Ohio, Illinois, Virginia, and North Carolina, offenders are ordered to attend meetings with law enforcement or probation officials during the evening hours of Halloween (Associated Press, 2006; Walberg, 2006). In Idaho, Maryland, Florida, and Texas, sex offenders on probation are warned not to decorate their homes and are told to keep their houses dark on Halloween night. In Kentucky, sex offenders receive a letter from police telling them not to give out candy or have unauthorized contact with children. Michigan police told a Lansing television station that there are no laws in the state prohibiting a sex offender from handing out candy but recommended that parents check the sex offender registry before trick-or-treating.

These policies are premised on the theory that Halloween provides an opportunity for sex offenders to make contact with youngsters for improper purposes or to use costumes to conceal their identities and avoid detection (O'Connor, 2005). In particular, Halloween policies are aimed at protecting children from sexual assault by nonfamily members and individuals with whom a child has little routine contact outside of the Halloween context. A second premise is the perception that sex offenders have alarmingly high recidivism rates, generating understandable concern and mobilizing efforts toward community protection policies (Levenson, Brannon, Fortney, & Baker, 2007). In fact, it has been found that a minority of convicted sex offenders go on to be rearrested for new sex crimes (Bureau of Justice Statistics, 2003; Hall, 1995; Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2004; Harris & Hanson, 2004). Furthermore, apprehensions about "stranger danger" can be misleading, as more than 90% of sexually abused children are victimized by someone known to them, often a relative or close acquaintance (Bureau of Justice Statistics, 2000, 2004). A study in Jacksonville, Florida, found that 15 out of 230 sex offenders (about 7%) were neighbors of their victims (Bartkowiak & Daniels, 2007), and in Minnesota, about 3% to 4% of repeat sex offenders victimized neighbors (Duwe, Donnay, & Tewksbury, 2008).

Law enforcement officials note that Halloween laws were not developed in response to actual attacks reported to have occurred on 31 October or in a trick-or-treat context (O'Connor, 2005). Police have generally not expressed alarm about an observed increase in incidents where children are snatched off porches or victimized on Halloween. Notably, the chair of the parole board in New Jersey stated that there were no known assaults by registered sex offenders committed on Halloween (Wood, 2006). Kristen Anderson, director of the case analysis division for sex offender tracking at the National Center for Missing and Exploited Children, was quoted as saying that only nine nonfamily child abductions were reported in the United States between 29 October and 1 November over a 5-year period, none of which appeared to have any connection to trick-or-treating (Kriel, 2008).

Although the types of offenses targeted by Halloween sex offender policies may be rare, a rationale for these policies might exist nonetheless. On one hand, it could be the case that sex crimes show an unusual spike on or around Halloween, justifying a corresponding intensification in vigilance and restrictions. On the other hand, the holiday could be a completely typical and routine day as far as these types of offenses are concerned, contradicting a major part of the rationale on which the policies are based. Whether or not there is actually a measured elevation in child sex crime risk on Halloween is unknown. This is a question that has received little or no empirical study. The purpose of this study was to empirically examine whether there is a Halloween effect on nonfamilial sex crimes against children—that is, whether the rate of these crimes on Halloween differs from what we would expect if it were just another day.

Method

Data for the study were drawn from publicly downloadable National Incident-Based Reporting System (NIBRS) data sets. NIBRS was instituted in the United States as an updated and more detailed replacement for the uniform crime reporting system that has been in effect since the 1930s. Similar to the uniform crime reporting, NIBRS draws data from local law enforcement agencies in individual reporting jurisdictions. Some or all of a state's jurisdictions may participate in NIBRS. Participating jurisdictions are required to demonstrate that their local data categories can be translated reliably and accurately into NIBRS coding categories. One of the main advantages of NIBRS is that it provides detailed data on individual, not aggregated, incidents known to law enforcement, including information about the incident date, the victim(s) and offender(s) involved, the type of crime(s) involved in the incident, victim(s) characteristics, offender(s) characteristics, and expanded victim-offender relationship information. NIBRS participation is limited but accelerating. In 1995, jurisdictions in 9 states were contributing data; by 1997 the number was 12

states, and by 2004, jurisdictions in 29 states submitted reports. By 2004, NIBRS covered approximately 20% of the nation's population and recorded data on more than 4 million individual crime incidents annually, which constitutes approximately 16% of crimes in the United States. Although not a representative sample, NIBRS does provide a rich database suited to examining trends and patterns in more finely grained crime categories.

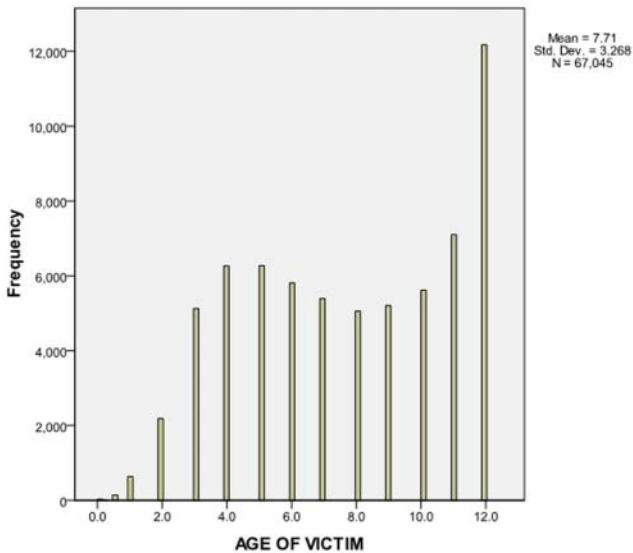
NIBRS is particularly well suited to the purposes of this study because it provides detailed individual-level information about crime incidents, including the occurrence date, the type of crime, victim age, and the type of preexisting victim–offender relationship. It also covers a time frame beginning prior to the widespread popularity of Halloween sex offender policies up until the recent past. NIBRS data allow us to narrow the examination to sex crimes that might reasonably be addressed by Halloween sex offender policies. For example, sex crimes against children committed by family members, close friends, babysitters, teachers, or others are not directly addressed by Halloween-related sex offender policies. Rather, these policies are most directly concerned with preventing sex crimes against children in trick-or-treat and similar contexts that might bring the child into contact with sex offenders who are strangers, acquaintances, neighbors, or individuals with no preexisting close relationship to the child. Similarly, these policies are most directly concerned with preventing sex offenses against young children rather than sex offenses against all victim age groups. Because these policies are often directed toward offenders on sex offender registries, they can apply to both adult and juvenile offenders depending on local registration practices and policies. Individual incidents were selectively included from NIBRS data with these considerations in mind.

Victim data from the 1997 through 2005 NIBRS reporting years were used for the study. These years captured data from jurisdictions in 10 states in 1997, expanding to 30 states by 2005. Victimization incidents were included if they met the following criteria: (a) the victim was age 12 years or less on the occurrence date (not the reporting date) of the incident, (b) the primary offender in the incident had no reported preexisting family or role relationship to the victim, and (c) the offense(s) coded included at least one sex crime other than a prostitution-related offense. The offenses included were forcible sodomy, forcible rape, statutory rape, sexual assault with an object, child pornography–related crimes, and forcible fondling. The resulting combined sample included 67,045 victims.

Results

Because Halloween-related activities sometimes occur on the days immediately preceding Halloween, as well as on Halloween itself, a span of 3 days (Halloween and 2 days prior) were designated as Halloween days for all statistical comparisons. Victims were 73% female and 27% male with a mean and median age of 8 years.

Figure 1
Age of Victims



Victim age was bimodally distributed, and the most common ages of victims were 12 and 11, followed by 4 and 5 years of age (see Figure 1). Victims were 75% White, 19% Black, 5% unknown, and less than 1% Native American/Alaska Native and Asian/Pacific Islander. Five percent were reported as ethnically Hispanic. Victim gender, age distribution by year, median age, race, and ethnicity did not significantly differ between Halloween and other days. Primary offenders were 94% male with a mean age of 24 and a median age of 18, which did not differ between Halloween and other days.

A total of 67,307 sex offenses were coded for the 67,045 victims. The most common offense category was forcible fondling (63%), followed by forcible rape (15%), forcible sodomy (12%), sexual assault with an object (6%), and statutory rape (4%). The distribution of offense categories did not differ significantly between Halloween days and other days. The victim–offender relationship for the sample was coded as acquaintances (43%), followed by an unknown person (28%), neighbor (8%), stranger (5%), or a person otherwise known to the victim but not an unspecified family member (15%), and the distribution did not significantly differ between Halloween days and all other days.

The overall analytic strategy for examining offense rates involved three steps. First, the time series of daily rates over 9 years was examined for trend, seasonality, and periodicity. Second, a predictive model was specified to account for seasonal and periodic cycles. Finally, the Halloween effect was tested for deviation from prediction. Daily report numbers over the 9 years were calculated by aggregating the number of victims for each day in the time series.

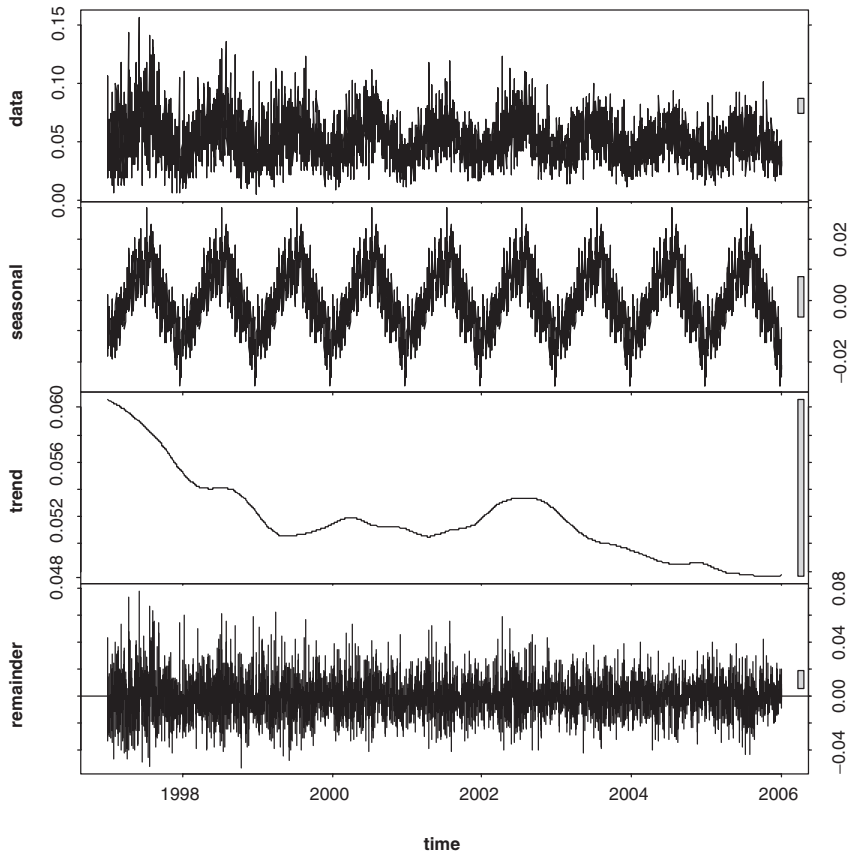
A distinct and invariant day-of-month effect was observed in the raw data, reflecting very high reporting on the first day of every month, likely because of interval censoring for incidents where the incident month may be known but not the exact date. Additionally, elevated annual (on 1 January of each year) and midannual (on 1 June of each year) spikes are present also likely because of censoring. The first day of each month was removed from the overall time series to manage this irregularity. Daily report counts were transformed into rates per 100,000 of population. Summed annual population figures associated with each individual NIBRS reporting jurisdiction for each year were used for estimating rates. Linear interyear interpolations were used to create a series of estimated daily population numbers, which served as the denominator in daily time series rate calculations. The time series of rates was decomposed into trend and seasonal components using a Loess decomposition procedure in R with optimized time span settings (Cleveland, Cleveland, McRae, & Terpenning, 1990). This is shown in Figure 2. Regular, sinusoidal seasonal patterns were observed, along with an overall declining trend over the 1997 to 2005 time period. Finally, weekday periodicity was observed, with weekend incidents being somewhat less prevalent than Monday to Friday incidents. Trend and seasonality components seen in Figure 2 were modeled as a Fourier series

$$Y_t = \alpha_0 + \alpha_1 t + \alpha_2 t^2 + \beta \left(\cos \left(\frac{2\pi}{l} t \right) \right) + \gamma \left(\sin \left(\frac{2\pi}{l} t \right) \right) + e_t,$$

where Y_t is the incident count at time t , l is the period length, and e is residual error. Trend components are reflected in the linear and quadratic terms involving t , and seasonality components are reflected in the sine wave (sin and cos) terms. The Fourier model fits the data well, accounted for 50% of observed variability, and all parameters were significant. The fit of the Fourier prediction model with observed counts, aggregated across years to show fit for 1 mean year, is shown in Figure 3. Note the substantial rate increases during the summer months. Predicted counts from the Fourier model for each day in the series were saved and converted to rates per 100,000 of population for use as covariates in the final model of Halloween effects.

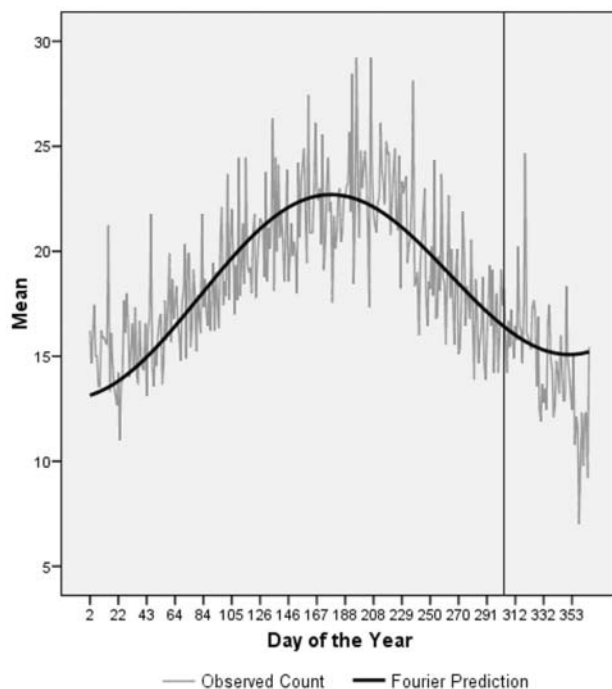
Daily rates were modeled as the outcome using a mixed model procedure with restricted maximum likelihood estimation of model parameters. Days of the year were treated as subjects and years as a repeated factor with a diagonal covariance

Figure 2
Loess Decomposition of Trend and Seasonality



structure. Explanatory variables included the predicted rate estimated by the Fourier model to account for linear + quadratic trend and sinusoidal seasonality, an indicator variable coded for day of the week to account for weekday periodicity, and an indicator variable for Halloween (including the two prior days) as the effect of interest. No significant effect attributed to Halloween days was found (see Table 1). Examining Figure 2, greater residual variability was noted during earlier periods of the time series. Residual weights were applied to the model to correct for this, using the reciprocal of the time predicted squared model residual, but this did not alter

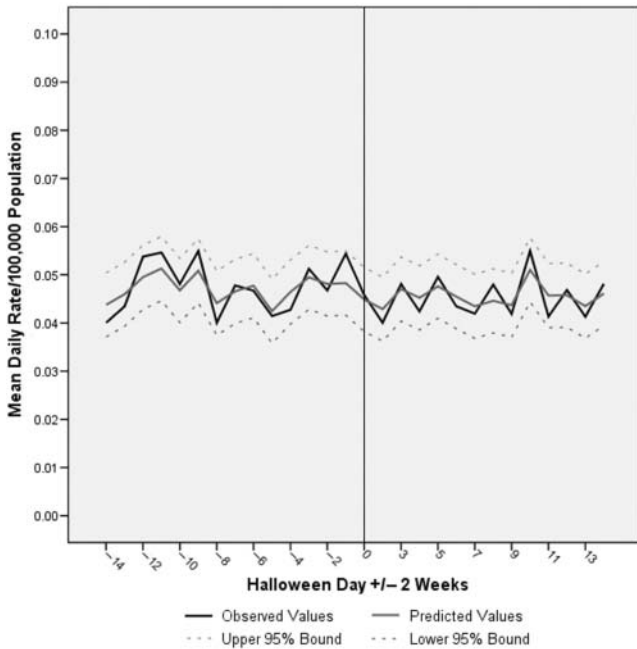
Figure 3
Fit of Fourier Model With Observed Counts, Aggregated
Across Years, With Reference Line at Halloween



results. Data on Halloween sex offender policies in the individual jurisdictions were unavailable, but it is likely that several began to implement sex offender policies at some point given that the policies have seen widespread uptake over the study time frame. If these policies produced a net effect over time on overall Halloween victimization, we would predict that the rates of offenses on Halloween would show greater decline over time relative to the rates for other days. If true, this might explain the absence of a simple Halloween effect. To test whether there may have been greater reductions in offense rates on Halloween relative to other days over the 9-year span, a year-by-Halloween interaction term was added to the model. The interaction did not approach significance. The observed rates and predicted rates from a restricted model (excluding the Halloween effect) for Halloween day and the surrounding ± 14 days are presented in Figure 4.

To contextualize sex crimes against children by nonfamily members, we examined only the most recent year included in the study (2005), which included information on

Figure 4
Observed Rates Versus Restricted Model Predicted Rates
(Excluding Halloween Variable From the Prediction Model) for
the Month Surrounding Halloween. Reference line at Halloween



more than 5 million victimizations from 30 states with reporting jurisdictions. The most common types of crime from among the incidents reported on Halloween and adjacent days were theft (32%), destruction or vandalism of property (21%), assault (19%), and burglary (9%). Vandalism and property destruction accounted for a significantly greater proportion of crime around Halloween compared with all other days (21% vs. 14% of all reports). Sex crimes of all types accounted for slightly more than 1% of all Halloween crime. Sex crimes against children of the kind examined in this study accounted for less than .2% of all Halloween crime incidents.

Discussion

This study found no significant increase in risk for nonfamilial child sexual abuse on or just prior to Halloween. Although sex offenders may use seemingly innocent

Table 1
Model Results Testing the Effect of Halloween Versus Other Days, Controlling
for Fourier Trend and Seasonality, Plus Weekday Effects

Source	Numerator <i>df</i>	Denominator <i>df</i>	<i>F</i>	Significance
Intercept	1	400.068	26.691	.000
Halloween	1	331.727	.258	.612
Fourier prediction	1	550.670	497.325	.000
Weekday	6	2670.719	114.329	.000
Year	8	1952.419	3.880	.000

opportunities to engage children and sexually abuse (Conte, Wolf, & Smith, 1989; Salter, 1995) and therefore might be hypothesized to use trick-or-treat for ulterior purposes, this logic does not appear to translate into any actual unusual rate of sex offenses on Halloween. The absence of a Halloween effect remained constant over the 9-year period, beginning well before the current interest in Halloween sex offender policies and extending to recent years. Any Halloween policies that have been adopted by reporting jurisdictions during that period appear not to have affected the overall sex offense rate.

Halloween was also typical in terms of victim and offender characteristics, the types of child sex offenses reported, and the categories of victim-offender relationships involved. As with all other days of the year, young children are sexually victimized on Halloween. We do not suggest that there is no risk on Halloween or that anecdotal accounts of Halloween molestations should be dismissed. Nor do we suggest that parents should abandon caution and reasonable supervision of their children. But there does not appear to be need for alarm concerning sexual abuse on these particular days. In short, Halloween appears to be just another autumn day where rates of sex crimes against children are concerned. If anything, increased vigilance concerning risk should be directed to the summer months in general, where regular seasonal increases in rates are readily seen (see Figure 3).

Although the sample available through NIBRS did not include all states, the similarities in overall time trends to those found by other researchers using 50-state data sources are encouraging. During the study time frame, decreases in violent crime have been observed in general (Bureau of Justice Assistance, 2008). Official crime data and victim reports both indicate that rape arrest rates peaked in 1990 and have decreased steadily since 1991 (Maguire & Pastore, 2003). Examining child welfare data, a 51% decline in child sexual abuse rates have been observed between 1990 and 2005 (Finkelhor & Jones, 2004; Jones & Finkelhor, 2003). Ironically, these welcome decreases appear to coincide with escalating anxiety, fueling fear in parents and prompting legislators to propose laws to assuage the concerns of their constituents (Sample & Kadleck, 2008). In this case, worries and good intentions might have inspired advocates and lawmakers to propose legislation that combats a nonexistent problem. The findings suggest that Halloween policies may in fact be targeting a new urban myth similar to past myths warning of tainted treats. The results are

consistent with observations offered by law enforcement officials who do not describe any epidemic of trick-or-treaters being assaulted by known sex offenders and who have observed no unusual rate of child sexual assault events on Halloween (O'Connor, 2005).

It might be argued that Halloween sex offender policies are worthwhile even if they prevent only a single child from being victimized. However, this line of reasoning fails to consider the cost side of the cost-benefit equation. The wide net cast by Halloween laws places some degree of burden on law enforcement officers whose time would otherwise be allocated to addressing more probable dangerous events. For example, a particularly salient threat to children on Halloween comes from motor vehicle accidents. Children aged 5 to 14 years are four times more likely to be killed in a pedestrian-motor vehicle accident on Halloween than on any other day of the year (Centers for Disease Control, 1997). Regarding criminal activity on Halloween, alcohol-related offenses and vandalism are particularly common (Siverts, 2002). Although we do not know the precise amount of law enforcement resources consumed by Halloween sex offender policies, it will be important for policy makers to estimate and consider allocation of resources in light of the actual increased risks that exist in other areas, such as pedestrian-vehicle fatalities. Our findings indicated that sex crimes against children by nonfamily members account for 2 out of every 1,000 Halloween crimes, calling into question the justification for diverting law enforcement resources away from more prevalent public safety concerns.

Study results should be considered in light of the strengths and limitations. The data drawn from NIBRS captured more than 67,000 sex offenses reported to law enforcement agencies in 30 states across 9 years and did allow exclusion of familial or similar sex crime cases that are not targeted by these policies. As with all secondary crime data sets, data entry error or jurisdictional idiosyncrasies might affect the precision of the results. Also, the data set did not contain variables that would have been valuable for even more precisely focusing the study incidents, such as information about whether the perpetrator was a registered sex offender or whether the incident specifically involved a trick-or-treat context. The data set did not provide information about any situations where Halloween activities may have contributed to grooming or set up an incident that took place on a later date. This study does, however, provide the first empirical analysis of child sex crimes occurring on Halloween and, therefore, can inform policy development, law enforcement resource distribution, and case management practices.

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