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COVID-19 and stay-at-home orders: An application of routine activity theory in Philadelphia
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Guardianship and Crime 1

COVID-19 and stay-at-home orders: An application of routine activity theory in Philadelphia

Abstract

The coronavirus pandemic changed the routines of people all over the world. Because of the implementation of government stay-at-home orders, people started doing more of their daily activities from home. This explores the impact coronavirus had on burglary counts in Philadelphia. Data were used from OpenDataPhilly to compare both non-residential and residential burglary counts from April through June 2019 and April through June 2020, a latter time frame, a period when routine activities were likely significantly altered as many more people stayed at home. It was anticipated that as more people stay at home and Philadelphia would experience fewer residential burglaries and at the same time non-residential burglaries would increase. Residential burglaries decreased from April through June 2019 to April through June 2020, while non-residential burglaries increased from April through June 2019 to April through June 2020.

COVID-19 and stay-at-home orders: An application of routine activity theory in Philadelphia

#### Introduction

In late 2019 parts of the world were met with the outbreak of the coronavirus. Originating in Wuhan, China, it quickly spread to all corners of the globe and in late January 2020 it had reached the West Coast of the United States. However, it wasn't until early March that the coronavirus had been identified as spreading to the East Coast and hit Philadelphia. Days after it had reached Philadelphia. It was established by President Trump that coronavirus was a national emergency, and shortly after that announcement, in order to help combat the spread of coronavirus, Pennsylvania Governor Tom Wolf declared a stay-at-home order beginning March 23rd, 2020 (US Department of State, 2020). Philadelphia Mayor, Jim Kenney, also issued a stay-at-home order for Philadelphia a couple days later (6abc News, 2020). This order instructed that people could only go out of their houses for essential activities, like grocery shopping, seeking medical help, and working (6abc News, 2020).

Naturally, the implementation of this order affected people's routine activities. More people began working from home instead of the office, visiting the grocery store less often, while communicating with their peers and friends via telecommunication methods increased. The stay-at-home order limited their time outside and the people they would physically interact with, and as a result of these social changes, according to the routine activities theory, the amount and nature or types of crimes committed in the city of Philadelphia would be altered.

This paper focuses on the potential impact of the coronavirus pandemic on the population of Philadelphia's routines and therefore the amount of crime committed. Specifically, it explores the change in everyday routine because of the coronavirus and the stay-at-home orders and how that may impact the crime count for both residential and non-residential burglaries. To examine

the change in crime, it is important to compare the data from April through June 2020 to pre-COVID/pre-stay-at-home orders burglary data, which will be from the same time period but in 2019.

#### **Literature Review**

The routine activities theory was originally proposed in 1979 by Cohen and Felson. It states that "the structure of everyday activities influences criminal opportunity and therefore affects trends in a class of crimes" (Cohen and Felson, 1979, p.589). Cohen and Felson concluded that there are three key factors that affect the amount of crime: motivated offenders, suitable targets, and the lack of capable guardianship (Cohen and Felson, 1979). Motivated offenders are defined as "people who chose to violate rules and are the immediate cause of a crime" (Sampson et al 2009, p.39). While suitable targets are "the people or things they attack, steal, deface, injure, kill, intimate, and otherwise harm" (Sampson et al., 2009, p.39). Finally, capable guardians are defined by Hollis et al (2013) as:

"a guardian keeps an eye on potential target of crime. This includes anybody passing by, or anybody assigned to look after people or property. This usually refers to ordinary citizens, not police or private guards.... Usually we think of guardians as looking after specific persons and property that could be targeted" (p.72).

Sampson, Eck and Dunham argue that place is one of the three factors of the routine activities theory. They describe place as "the locations where offenders and targets get together, and they include the characteristics of the locations that facilitate or inhibit crime" (2009, p.39).

In Cohen and Felson's research, post-World War II brought a change in routine to many people in the United States. This change was that more women were working, and so there was an increase amount of time that the house was left during the day unsupervised. More women working meant that the average household income increased, and people were spending more. The higher quality items, like home entertainment systems, were the perfect item for a burglar, since they had a high resale value, and their size and weight made them suitable to steal. This change in routine made it easier for burglaries to occur, since there was higher chance that all three factors of this theory would interact and result in crime.

Since Cohen and Felson's seminal work, additional researchers have applied the routine activities theory on crime trends after World War II, how global warming effects crime, and how it affects online crimes (Nogueira de Melo et al., 2018). Nogueira de Melo et al looked at the effects of the temperature on crime from the routine activities perspective (2018). They used the routine activities theory to hypothesize that as the temperature increased, the amount of crime would also increase. They received data from the Campinas Civil Police from 2010-2013, which was acquired by a database that collected all the information about crimes that occurred during that time in Campinas. The results found that "rape, robbery, burglary and theft are distributed equally throughout the seasons" (Nogueira et al 2018, p.1973). They also found during the summer, homicides increase, which has also been studied and proven by other researchers.

Sampson, Eck and Dunham expand on Cohen and Felson's original theory by stating that each of the three factors listed above that Cohen and Felson found, has a controller (2009). Controllers have the ability to "exercise control over one of the necessary conditions" (Sampson et al 2009, p.39). In places that have no controllers, crime is more likely to occur. The reason that crime could occur, even if the controller is present, is because they do not have the intention to

help prevent crime, or do not realize their role in crime prevention. The controllers are: handlers; guardians; and managers. Handlers are the people who have emotional ties to the motivated offender. Examples of handlers are: parents; siblings; friends; coaches; or any other leaders the motivated offender interacts with consistently (Sampson et al 2009). Guardians are a variety of people and products and they also protect targets, examples include: CCTV cameras; neighbors or strangers looking out for each other; security guards; and police (Sampson et al 2009). Finally, managers are the controllers that regulate and enforce rules at the locations where crime can occur, and are either "the owners of the place, or the owners' representatives of the place" (Sampson et al 2009, p.39). These include store owners, janitors, bartenders and homeowners.

Crime can only occur when all three of these factors are present, but just because all three are present that does not necessarily mean that crime must occur. If both law enforcement and other members of society become more aware of the routine activities theory, it can be applied to different crime scenarios, which can help lead to crime prevention in a community, if they are ignorant to this theory, then crime will continue.

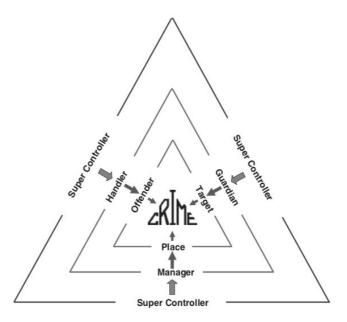


Figure 1: Super controllers and crime.

The third main part of the routine activities theory, which is also expanded by Sampson, Eck and Dunham on Cohen and Felson's original theory, is super controllers (2009). Super controllers, as the name suggests, influence the controllers. However, they do not have direct influence over the motivated offenders, potential targets and guardians (Sampson et al 2009). They do have influence over the places that controllers are present.

There are three different categories of super controllers: formal; diffuse; and personal (Sampson et al., 2009). Within these three categories, there are different types of super controllers. Formal super controllers include organizational, contractual, financial, regulatory and courts. Organizational controllers influence power in their organization, which includes examples like bars switching from glass to plastic cups so when a bar fight occurs, there are less injuries. Contractual controllers are present when they have influence over how people have control over other people, for example when a landlord has control over their tenant (Sampson et al., 2009). Regulatory controllers are government agencies that have controllers in place to

ensure that the society or other organizations comply with the morals and rules they have. An example of these super controllers are when the state has influence over the foster care system, or when malls require children to have adult supervision while they are there to prevent any juvenile misbehavior (Sampson et al., 2009).

The final type of super controller under the formal category is courts. The courts deal with influence over crime prevention through civil suits (Sampson et al., 2009). An example of this is when property owners must go to court if they do not fix property problems in a timely manner. The next category are diffuse super controllers, which includes political, markets, and media. Political super controllers "can provide incentives and disincentives for controllers to prevent crime" (Sampson et al., 2009, p.43). They are used "when the government does not have the power to regulate" (Sampson et al., 2009, p.43). For example, a university located in a higher crime area can stop construction and renting of off-campus residential buildings for students to prevent any harmful actions against them. It is normally not a federal or state government that are super controllers, but rather cities, towns or universities. Markets is the next category under diffuse super controllers, and they "put pressure on controllers, particularly place managers" (Sampson et al., 2009, p.44). An example of this is when there are affiliated apartments or houses near a university. The landlord benefits because they are marketed by the university over other off-campus housing, and the university benefits because the building is used to decrease victimization. Media is used as a way to influence crime, whether it prevents it or encourages it (Sampson et al., 2009). The final category of super controllers are personal super controllers. These consist of groups and family (Sampson et al., 2009). Family super controllers are defined as a way for the government to control how children are handled. An example of this is the way adoption agencies and the foster care system control who can have access to a child. Finally,

groups have control over both individuals and groups by putting pressure on them (Sampson et al 2009). An example would be how communities can pressure individuals into thinking a similar idea through front yard signs.

In Bunch et al.'s findings on the relationship between the routine activities theory and demographic of victims (2012), they discovered that the routine activities theory only partly explained the demographics of victims. They began by taking data from the 1999 National Crime Victimization Survey, using a multistage cluster sample design to select 50,000 households and had a 90% respondent rate. The primary demographics they looked at were age, sex, income and marital status. To measure the routine activities theory, they looked at two types of crime, theft and violent crimes, and also two different activities, shopping and going out at night. While both activities are done outside the house (online shopping was not included in this study), it provided an opportunity for crime to occur, since there was a suitable target, a potential offender and a lack of guardianship, as well as a place for it to occur. They found that women were most likely to experience theft and men were more likely to experience violent offences, since men typically feel more comfortable leaving the house at night. They also found an indirect relationship with age and both theft and violent offences, since younger people's routine involves leaving the house. Higher income individuals were more likely to experience theft, since they are the people who are typically buying more expensive items, while lower income individuals were just as likely to experience violence (Bunch et al., 2012). This may have to do with higher income individuals leaving their home more, but the researchers did not come to any conclusion about why low income individuals were as likely to experience violence. The final demographic category Bunch, Warner and Lei all looked at was marital status. They found that out of all of the categories, marital status was affected the least, but they did notice that people who were never

married went outside at night more, and therefore experienced violence more. Generally, they found that demographics has an indirect relationship to victimization when it comes to the Routine Activities Theory. They ended their discussion with the fact that they limited their research by examining the routine activities theory's impact on two types of crime.

## **Rationale for Current Study and Hypotheses**

The coronavirus pandemic brought a change in routine activities. People began staying home more and completing work and school at home. As a result, there were fewer opportunities for crime, as there was a decrease in suitable targets and an increase in guardianship, at least for some types of places such as one's personal residence. As Cohen and Felson found that for crime to occur, all three of the factors must intersect. Without a lack of guardianship, or suitable targets there will be no crime.

**Hypothesis 1:** In Philadelphia, from 2019 to 2020, residential burglary counts will decrease as people will be leaving their homes less due to the stay-at-home order.

**Hypothesis 2:** As Philadelphia goes through the phases of reopening, there will be an increase in residential burglaries as people will be eager to leave their homes more, leaving them without guardianship.

**Hypothesis 3:** In Philadelphia, from 2019 to 2020, non-residential burglary counts will increase as there will be a lack of guardianship in those places due to the stay-at-home order.

**Hypothesis 4:** As Philadelphia goes through the phases of reopening, there will be a decrease in non-residential burglaries as those places will have increased guardianship.

With more buildings becoming less accessible to the public due to the stay at home order, as well as more people staying at home for long hours of the day, it can be inferred that burglary will likely decrease. However, a potential offender could note the lack of guardianship in a non-residential building during closing hours, as there is no one around, but there could also be CCTV, alarms, or other guardianship substitutes to deter potential offenders from committing a crime. With more companies limiting their hours to prevent the spread of COVID, it provides more time without a proper controller or super controller to not be present.

#### **Methods and Data**

Philadelphia, Pennsylvania is the sixth biggest city in the United States and is located between Washington D.C and New York City. According to the 2019 Philadelphia County Census, the city's population was approximately 1.6 million people. About 34% of the population is White non-Hispanic, while 44% of the population is Black. Fifteen percent of the population is Hispanic or Latino. The rest of the population is mostly made up of Asians, and the rest of this is made up of native Hawaiians, or other pacific islanders and people who identify as having two races. As of 2018, 84% of the population over age 25 have a high school diploma, while 28% of the population over age 25 have a bachelor's degree or higher. Twenty-four percent of people who live in Philadelphia live in poverty, and the average income per person is \$26,557 (Philadelphia County Census 2019).

Researchers might be interested in how a significant change in routine activities might affect crime but it would be unethical and impractical to manipulate individual's routine activities for research purposes. Therefore, researchers take advantage of natural experiments, which occurs naturally or not induced by a researcher. These events such severe storm or a new

law that may result in changes that range from extreme to subtle (Craig et al., 2012, p.2). The COVID-19 pandemic created a natural experiment all over the world, but this paper is specifically looking at Philadelphia.

Data analyzed in this study comes from OpenDataPhilly (2020), an online repository of data sets that describe the Philadelphia region. The data were collected electronically from the Philadelphia Police Department. The data ranged from January 2020 through September 2020, when these data were accessed and downloaded. The data from 2019 ranged from January 1st, 2019 to December 31st, 2019. These data also included all crimes that occurred in Philadelphia County during these months in both the years 2019 and 2020. That data were eventually cut down to just non-residential and residential burglaries during the time period of April 1st 2019 and 2020 to June 30th 2019 and 2020.

## **Dependent Variable**

A burglary may be defined as "entering a building with the intent to commit a crime, this can include breaking and entering but could also be trespassing" (FindLaw). Even if a crime is not committed while inside the building, entering with intent to commit a crime is still burglary. The difference between residential and non-residential burglaries is that residential burglary "occurs whenever a perpetrator enters a structure adapted for overnight accommodations" (Glassman, 2017). Non-residential burglary can be defined as when "a perpetrator enters a structure not adapted for overnight accommodations" (Glassman, 2017). "The reason the law treats residential burglary more seriously is the greater risk to human life when a perpetrator enters a home as opposed to a business that is closed for the night." (Glassman, 2017).

#### **Independent Variable**

On March 19th, 2020 it was established by the Governor of Pennsylvania, Tom Wolf, that Pennsylvania will be shut down, apart from life sustaining businesses, which included businesses that provided health care providers (Wolf, 2020). In the reopening process, there were three phases, red, yellow and green. The red phase still had the stay-at-home order in place, large gatherings were prohibited, masks were required in all public spaces, and restaurants were takeout and delivery only (Wolf, 2020). During this time, school and work was primarily all online, with the exception of life-sustaining businesses and those that supply life-sustaining businesses (Wolf, 2020). The yellow was a reopening process that focused on proceeding with caution and safety with physical businesses had a capacity of 50%, and schools were allowed to reopen under the guidelines of the Department of Education (Wolf, 2020). The yellow phase also included childcare facilities reopening with caution and large gatherings were allowed, but were limited to 25 people. Restaurants, bars, and personal care services were still closed (Wolf, 2020). The green phase was a more lenient reopening, allowing physical business spaces to reopen at 75% capacity except for restaurants and bars, and they were allowed to open for indoor at 50% and outdoor dining at regular capacity (Wolf, 2020). Indoor gatherings were still limited to 25 people and outdoor gatherings were limited to 250 people (Wolf, 2020).

#### **Results**

The number of total burglaries in April through June 2019 was significantly outpaced compared to the same months in 2020. During the beginning of April to the end of June in 2019, the total count for both burglaries was 1,457, with 270 of those being non-residential burglaries, and the remaining 1,187 were residential. In comparison, that time period during 2020 more than doubled the count in 2019 with 3,805 overall burglaries. 1,580 were non-residential and 826 were residential. See Table 1 and Figure 1.

Table 1.1

Total Burglaries (2019)	Non-Residential	Residential
1,457	270	1,187

Figure 1.1

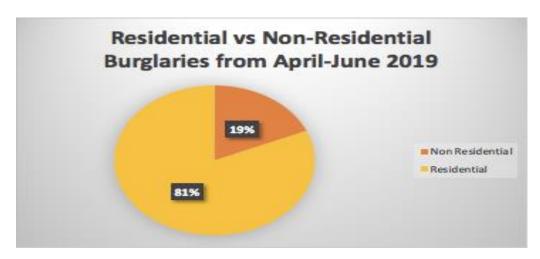
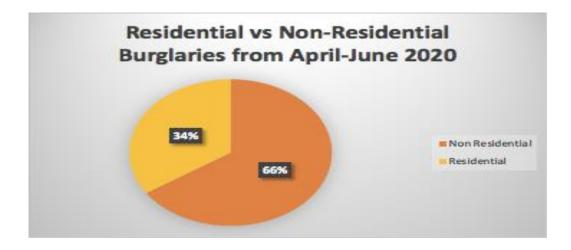


Table 1.2

Total Burglaries (2020)	Non-Residential	Residential
3,805	1,580	826

In Philadelphia, April through June of 2019, residential burglaries far outpaced non-residential burglaries. However, figure 1.2 explained that in April through June 2020, non-residential burglaries occurred much more than residential burglaries.

Figure 1.2



In 2019, the burglary count for both residential and non-residential slightly increased in May, then slightly decreased in June. However, in 2020 for non-residential burglaries there was a large increase as the months went on, with June having 1037 non-residential burglaries. For residential burglaries, the data looked a little different. The count slightly increased in May and then decreased in June back to around where the original count was in April.

April through June 2019 averaged a total of 485.67, while in 2020, the total average was 802. The average of non-residential burglaries in April through June 2019 was 90, and residential burglaries during these same months averaged 395.67. April through June 2020 averaged 526.67 for non-residential burglaries while the average for residential burglaries during these same months was 275.34. Seen in table 2.1, the median for non-residential burglaries in 2019 is 91, while the residential burglary median is 402. The total burglary count for April through June 2019 has a median of 486. In table 2.2, where it shows the data on the two types of burglaries in April through June 2020, the median for non-residential is 401, while the median for residential

burglaries is 273 during these same months. The total median for count in April through June 2020 is 486.

Table 2.1

2019	Non-Residential	Residential	Total
April	91	345	436
May	95	440	535
June	84	402	486

Table 2.2

2020	Non-Residential	Residential	Total
April	142	246	388
May	401	307	708
June	1037	273	1,310

As seen in Tables 2.1 and 2.2, 2019 did not vary as much as 2020 did. 2019 shows a range of 11 for non-residential burglaries, while residential burglaries had a range of 57. In 2020, non-residential burglaries had a range of 895, while residential burglaries had a range of 61. The total burglary range for 2019 had a range of 99, while in 2020 the range for the total burglary count was 922.

Figure 2.1

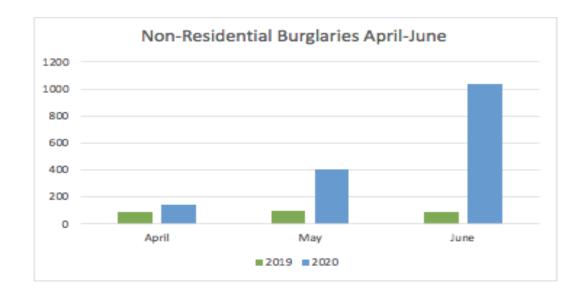


Figure 2.2

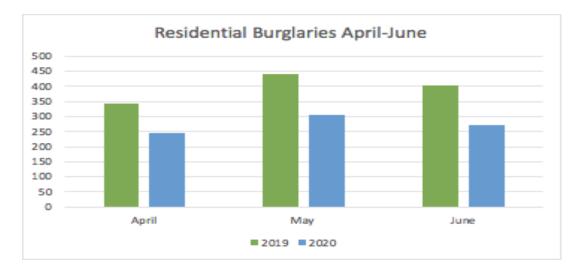


Figure 2.1 compares the non-residential burglary counts in both 2019 and 2020 to each other, while figure 2.2 compares the residential burglary counts in both years. In 2020, the non-

residential burglaries increased greatly overtime, as seen in figure 2.1, while in 2019, they stayed about the same, increased slightly in May and then decreased in June. While residential burglaries from April to June in both 2019 and 2020 followed the same pattern, which was increasing from April to May, then decreasing from May to June.

#### **Discussion**

These data collected and analyzed above partly align with the predictions mentioned earlier in this paper. Using the routine activities theory, it was hypothesized that as the longer Philadelphia was under the red phase, where there was a decrease in guardianship in a lot of buildings, there would be an increase in non-residential burglaries. This prediction was supported according to the data. As Cohen and Felson predicted in routine activities theory, as there is a potential offender, suitable target (which in this case is the building being burglarized), and a lack of guardianship. The results do not completely support Sampson, Eck and Dunham's (2009) extension of this theory. In the expansion of the routine activities theory by Sampson, Eck and Dunham, which includes having a place for the crime to occur also proves the routine activities theory, as the lack of guardianship makes the buildings more susceptible to crime.

The other hypothesis stated that if more people are at home due to COVID-19, there will be a decrease in residential burglaries. The figure 2.2 did not support this prediction, but does support the routine activities theory, as the residential burglaries increase and then slightly decrease. The reason for this could potentially be the change in weather from April compared to May and June. May and June in Philadelphia is typically when it gets hotter, and more people are going outside, which affects their daily routine. It was also in those months that restrictions were being lifted in Philadelphia, and naturally people were wanting to get outside more, since they

had been at home for the past two months, with limited reasons to go outside. With more people leaving their homes, it can be predicted that there will be more residential burglaries, since there is a lack of guardianship. These were also the months that children finished up their schooling for the year, meaning their routine changed from being inside to being outside more often.

Figures 1.1 and 1.2 support hypotheses 1 and 3. In 2019, residential burglaries from April through June accounted for 81% of all burglaries in Philadelphia. In 2020 during that same time period, residential burglaries only counted for 34% of burglaries in Philadelphia. This decrease can be supported by the routine activities theory, as if people were leaving their houses less due to COVID, which would lead to a decrease in suitable targets and increase guardianship, and therefore a decrease in burglaries. In Philadelphia, in 2019, non-residential burglaries only accounted for 19% of all burglaries from April through June. In comparison, 2020 had non-residential burglaries count for 66% of the total burglaries from April through June. This can be explained by the routine activities theory as non-residential places experienced a lack of guardianship and made them suitable targets for burglary.

Important limitations should be mentioned that may muddle attempts to link shifts in routine activities from coronavirus stay-at-home orders changes in crime counts. Other factors not accounted for might have played a role on crimes trends during this time. For example, at the end of May, George Floyd was murdered in Minneapolis, and some people during civil unrest burglarize chain retail buildings. During this time, super controllers, which are mentioned in Sampson, Eck and Dunham's extension of the routine activities theory, had very little influence on the controllers since they had not experienced a response like this, and the controllers at first did not understand how many guardians they needed to be present to prevent the burglaries. At the same time eventually, retail stores boarded up their windows, so the potential offenders

would deter from burglarizing the store. This action worked a way to harden a target, resulting in more effort and thus making it a less attractive target.

Other factors that might make it difficult to isolate shift in the causes of crime. It cannot be concluded that coronavirus was the main cause of potential offenders wanting to commit burglary, since there are a lot more reasons for burglary, such as the motivation to steal material goods or money. Another study limitation is that police behavior changed during June 2020, but the coronavirus pandemic was not the only reason for this. George Floyd's murder lead to protests a greater police presence in these area but potentially a lack of police in other areas of Philadelphia. Shifts in deployment might have allowed potential offenders to commit more burglaries, since there was a lack of guardianship. Another limitation is that not all burglaries are reported to the police. This makes these data above not completely accurate, since there might be many more burglaries that occurred during this time. Lastly, the current research assumes individuals and businesses were following stay-at-home order requirements; however, the degree to which stay-at-home orders were followed is unclear.

Looking ahead, future research might look at offences that occur frequently at home, such as domestic violence or elder abuse during the coronavirus pandemic, since the daily routine for so many people changed during this time, causing them to stay home more which increases the opportunity for people to commit offences that occur at home. Other future research might include looking at offence count during the coronavirus pandemic that occurs typically face to face, which can include murder and assault. Cybercrime during COVID-19 could also be an interesting future research topic, since more people are spending time online due to the increase in telecommunication as a way to prevent the spread. If more people are using their computers more in their daily routines, it is likely that cybercrime will increase.

# Conclusion

During the coronavirus pandemic in Philadelphia, specifically from April to June 2020, the residential burglary count decreased, while non-residential burglaries increased. The routine activities theory can be applied to this discovery, as it is probable that the stay-at-home order, implemented by Governor Tom Wolf, had people changing their everyday routine to increasing their time at home instead of going to work or school. Potential burglars are less likely to commit a residential burglary if they know that someone is in the house they are wanting to break into, due to the increased chance of confrontation by the present guardian. On the other hand, a lack of guardianship, which can be seen by less non-life-threatening buildings being open due to COVID-19, allows potential burglars to seek a window of opportunity to commit a crime.

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