

Providing some data to the great debate: Unknown v. known room entries

J. Pete Blair

Department of Criminal Justice, Texas State University

David Burns

Terry Nichols

John Curnutt

Advanced Law Enforcement Rapid Response Training

Providing some data to the great debate: Unknown v. known room entries

Police officers are frequently called upon to search buildings for potentially hostile suspects. It is not uncommon, for example, for a police officer to find the door to a business or industrial building unsecured during the course of his or her shift. When this occurs, the officer will generally call for backup, and then a team of at least two officers will search the unsecured building to see if someone is inside. In most of these cases, no one is inside, but in the worst case scenario, an armed suspect may be waiting to ambush the police. The likelihood of encountering a hostile, armed suspect is increased when police officers are responding to an active shooter call. During these events, a shooter has entered a public area and begun to shoot whoever he or she can find (i.e. the Columbine or Virginia Tech shootings). When responding to these events, the police are currently trained to enter the building where the shooting is occurring and find the suspect as quickly as possible to stop the killing.

One of the most dangerous parts of the search process occurs when the officers are transitioning from the area that they currently occupy into a new area, such as when the officers move from the hallway into a room. This is dangerous for two reasons. First, the officers will not be able to see the entire room until they enter. The officers, therefore, do not know if a suspect is in the room or where the suspect is located if there is a suspect in the room. Second, the suspect will know where the police officer's must enter the room (i.e. the door). This allows the suspect to position him or herself in a way that allows him or her to fire at the officers as they enter the room and before the officers know that the suspect is present.

The police have developed a number of techniques to mitigate the risks that the transition from one area to another presents. For example, officers are taught to move from one side of the door to the other while looking into the room. This is done without crossing the threshold of the

door. This technique is called “slicing the pie” and allows the officers to see the majority of the room before entering. If executed properly, with the officer’s head tilted to the side, the officer can often see someone in the room before that person sees the officer. Even if the officer does not see the suspect first, the officer can still step away from the door to avoid fire.

While slicing the pie is useful, it does not allow the officer to see the entire room. There is always at least one blind corner, located on the same wall as the door, which the officers cannot see (see diagram 1). In order to verify that the room is not occupied, the police officers must enter. Two entry techniques are commonly taught to police officers. These are called the Unknown and Known techniques. The next section discusses these techniques and the debate around their advantages/disadvantages.

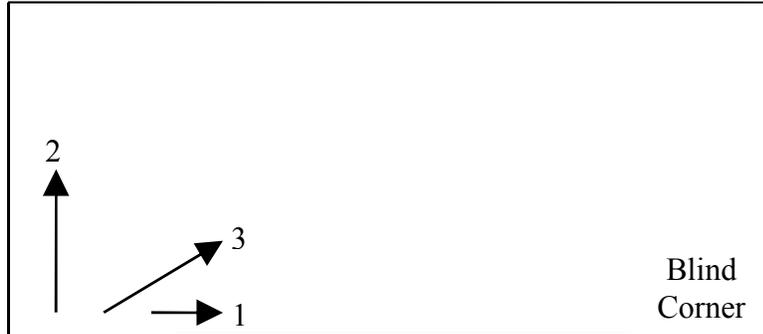
Traditional Entry Techniques

Because “slicing the pie” is a standard technique taught in many police academies, the entry techniques will be discussed with the assumption that at least one of the officer’s has “sliced the pie” before entering the room. Additionally, Diagram 2 is presented to help illustrate the entries. All entries also assume a two-person entry team.

Unknown

The unknown entry is referred to as the unknown because the first officer to enter the room moves directly toward the part of the room that was not seen while slicing the pie. This is represented by line 1 in Figure 2. The second officer proceeds laterally into the room along line 2. It should be noted that while the second officer is moving into the room, he or she is not looking straight ahead, rather the second officer looks first to the blind corner because that is the area of the room which has not been seen from the hallway.

Figure 2. Room Entry Diagram



Known

In the known entry, the first officer to enter moves directly toward the area that he or she has already seen, and thus, cleared. This is represented by line 2 in Figure 2. It should again be noted that the officer is looking first at the corner that has not been cleared. The officer is therefore looking in one direction, but moving in another. The second officer moves directly toward the blind corner upon entry. This is represented by line 1 in the diagram. The known entry is simply the unknown entry executed in reverse order.

The Debate

The advantages/disadvantages of the various techniques have been the subject of intense debate amongst police officers. Unfortunately, from an academic viewpoint, these debates have not been conducted in writing nor have they been addressed empirically. Instead, they have taken place informally amongst the supporters and detractors of the techniques. The most common arguments will be summarized here.

Supporters of the unknown technique argue that this technique gives the first officer into the room the best shooting accuracy. This is because the officer is moving directly toward the threat and the threat is becoming a bigger and bigger target as the officer advances. The

argument is that accuracy is more important than other issues because the officer can best protect him or herself by shooting the suspect as quickly as possible.

Supporters of the known technique argue that the unknown technique has several disadvantages. The first is that because the suspect is waiting in the room, he or she will be able to fire before the entering officer. This is because the entering officer has to enter, scan for threats, assess the threat, decide to shoot or not, and then shoot, while the suspect simply sees a police officer come through the door and shoots. Supporters of the known technique argue that this means the first officer must assume that he or she will not fire first and instead should be concerned with making the shots of the suspect less accurate. The lateral movement, relative to the suspect in the corner, is assumed to reduce the accuracy of the suspect's shots. Relatedly, supporters of the known technique argue that the shot accuracy advantage created when the officer moves directly toward the suspect in the unknown entry also applies to the suspect. That is, the suspect gets more accurate as the first officer in the unknown entry advances along line 1 in the diagram. The first officer in the unknown is believed to be more likely to be hit and be hit more often than the first officer in the known entry.

Additionally, supporters of the known technique argue that because the second officer to enter the room must move behind the first officer, the second officer might be hit by shots intended for the first officer. That is misses on the first officer (or bullets that over penetrate) could become hits on the second officer.

The supporters of the known technique acknowledge that the reduction in suspect accuracy created by the first officer's lateral movement also conveys to the first officer. That is because the first officer is entering laterally, his or her shots will be less accurate. Supporters

argue that it is primarily the second officer's job to disable the suspect. This has led some critics of the known technique to refer to the technique as the "rabbit".

Another disadvantage of the unknown technique, as argued by supporters of the known technique, is that because the second officer must move behind and far enough past the first officer to fire safely, the second officer will be slower to fire at the suspect. This is important because the second officer must disable the suspect in the event that the first officer is disabled upon entry.

A New Technique

To further complicate the issue Paul Howe, a tactical training provider and former Special Forces operator has introduced a new technique. We refer to this technique as the Hybrid because blends elements of the other two techniques. In this technique the first officer moves along line 3 in Figure 2. The second moves along line 1.

Supporters of the hybrid technique argue that it possesses the strengths of both the unknown and known techniques. The slightly lateral movement of the first officer is believed to reduce suspect accuracy while not reducing officer accuracy. The entry of the second officer along line 1 is believed to be faster than the entry of the second officer along line 2 in the unknown and not to expose the second officer to fire at the first officer.

Research Questions

From the issues identified above, three research questions for the entry techniques can be derived. They are stated as research questions because no empirical research has been conducted to date.

Research Question 1: Do the entry techniques affect the accuracy of the suspect's fire?

Research Question 2: Do the entry techniques affect the accuracy of the first officer's fire?

Research Question 3: Do the entry techniques affect the speed with which the second officer can fire?

This paper seeks to address the three questions through the two experiments discussed below.

Experiment 1 will address the first research question. Experiment 2 will address questions 2 and 3.

Experiment 1

Methodology

Overview. This study focused on the performance the suspects waiting to ambush officers as they entered the room. The study featured three conditions. These were the known, unknown, and hybrid entry techniques. The study was a 1x3 repeated measures design in which each suspect participated in each condition. A fully counterbalanced design was utilized to control for entry order effects.

Sample. Participants will be recruited from criminal justice classes at Texas State University by offering course credit. 69 students participated.

Procedure. The study was conducted at Advanced Law Enforcement Rapid Response Tactic's (ALERRT) training facility. Upon arrival, the participants participated in standard force-on-force safety preparations. This included searching the participants to ensure that no weapons are brought into the facility and a briefing on the safety rules for the use of Simunition FX Marking Cartridge weapons. During this briefing, the participants were issued and instructed in the use of the safety equipment. Both the searches and safety briefing will be conducted by certified ALERRT instructors who are either full time police officers or retired police officers. Biographical Information was also collected at this time. Participants were told that they are

playing the role of a suspect who shot someone and fled into the study building. They are now hiding in the room and waiting to ambush the police officers who are searching for the suspect.

Following the briefing, participants were given the opportunity to fire five rounds at a target to familiarize themselves with the training pistol. The participant was then placed in the entry room by a safety officer. This room was rectangular in shape and had the door located in the north east corner of the room. The suspect was always placed in the blind (south east) corner of the room. The suspect was approximately 5 yards from the door. The safety officer verified that the study area was ready, inspected the participant's safety equipment to ensure it is properly attached, issued the Simunition weapon, and declared the room hot. The same team of 2 highly experienced police officers then executed one of the three entries based upon a fully counterbalanced rotation. All of these exchanges were video recorded. The suspects had four rounds of different colors in their gun for each round. This allow us to determine exactly which round hit each officer. Each police officer on the entry team had three rounds. These were provided simply to place stress upon the suspect.

After the engagement, the safety officer called cease fire, collected the weapons, and inspected the participant officers for hits. He then escorted the officers out of the entry room into a safe room. The entry room was then reset and the officer's executed the next assigned entry after the room was declared hot. This process was repeated until the officers had executed all three entries against a particular suspect.

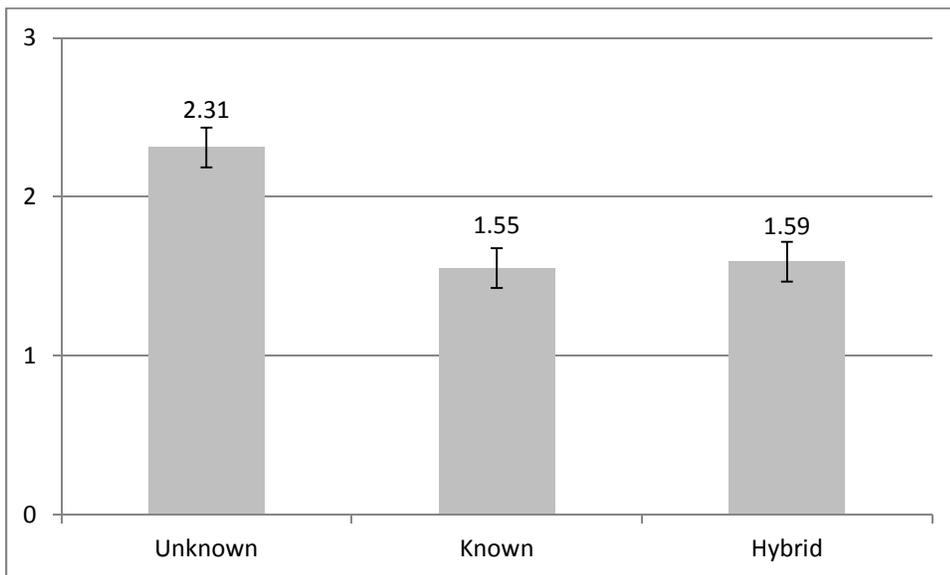
Results

The 69 participants completed a total of 207 runs. They fired a total of 828 rounds at the entering officers hitting them a total of 373 times for a hit rate of 45%.

The data was then analyzed using a repeated measures multilevel model. The suspects were treated as the level two variable and the entries were treated as the level one repeated measures variable. The dependent variable was one of three hits related variables. The first examined the total number of hits on both officers. The second considered the number of hits on the first officer to enter the room, and the third assessed the number of hits on the second officer to enter the room.

The model examining the effect of entry type on total hits was significant ($F_{(2, 200.62)} = 11.66, p < .001$). The mean number of hits on the officers in the unknown entry condition was 2.31 (SE = .13, See Figure 3). The mean number of hits on the officers in the Known entry condition was 1.55 (SE = .13), and the mean number of hits on the officers in the Hybrid entry condition was 1.59 (SE = .13). Post hoc pairwise comparisons indicated that the officers were hit significantly fewer times in the Known and Hybrid entries than in the Unknown entries.

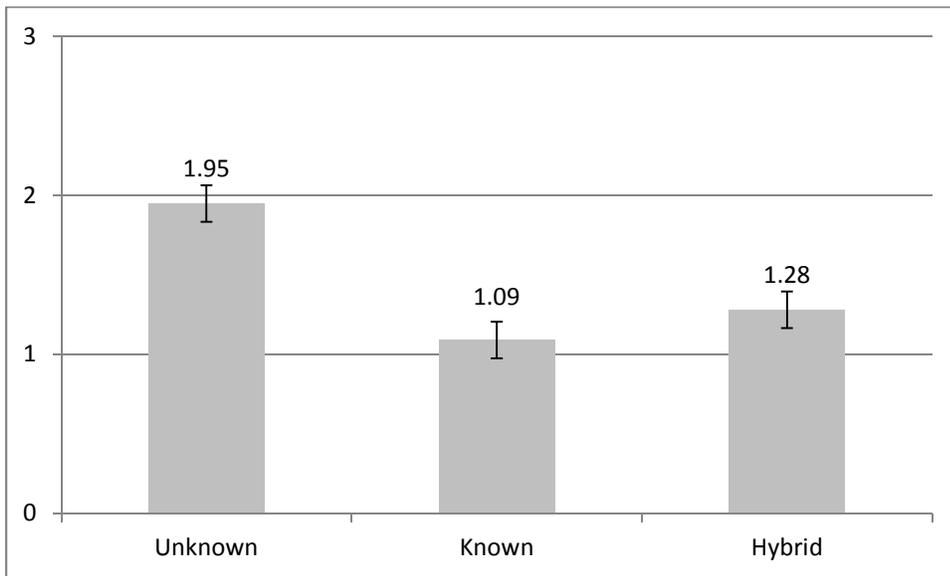
Figure 3. Average number of total hits by condition.



The model examining the number of hits on the first officer to enter also revealed a significant effect for entry type ($F_{(2, 203.43)} = 15.30, p < .001$). The first officer was hit an average

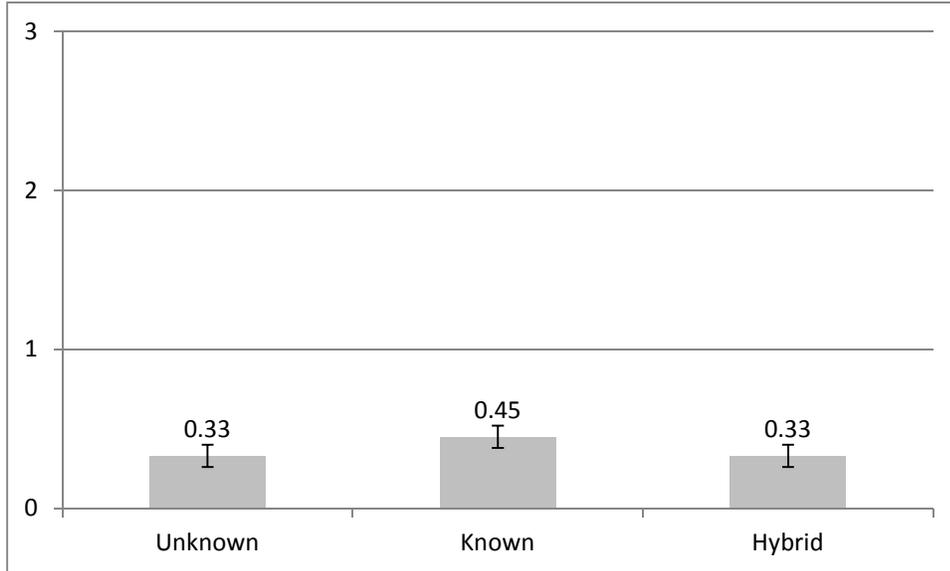
of 1.95 times on each unknown entry (SE = .12, See Figure 4). The first officer was hit an average of 1.09 times during the Known entries (SE = .12), and an average of 1.28 times during the Hybrid entries (SE = .12). Post hoc comparisons also found, at the $p < .001$ level, that the first officer was hit significantly less in the Known and Hybrid entries than in the Unknown entries.

Figure 4. Hits on the first officer by entry



The final model, which examined hits on the second officer to enter, did not suggest a significant difference by condition ($F_{(2, 199.95)} = 1.00, p = .37.$). Second officers were hit an average of .33 times on the Unknown entry (SE = .07), .45 times on the Known entry (SE = .07), and .33 times on the Hybrid entry (SE = .07, see Figure 5). It should also be noted that in 11 of the 69 (16%) Unknown entries, that the second officer was hit while moving behind the first officer.

Figure 5. Hits on the second officer by entry



Experiment 1 Discussion

The results of the first experiment clearly support the contention that lateral movement degrades the accuracy of suspects. Both in terms of total number of hits and hits on the first officer, the Known and Hybrid entries appear to be superior to the Unknown entry. Additionally, the contention that the second officer can be hit while moving behind the first was confirmed. In 16% of the unknown runs, the second officer was hit by rounds aimed at the first officer. Considering that the Simunition round cannot penetrate the first officer's body, this number can reasonably be expected to be higher when dealing with actual firearms. We turn now to the impact of the entries on the accuracy of the first officer and the speed with which the second officer can fire.

Experiment 2 (In Progress)

This study will focus on the performance the police officers making the entries. This study will feature three conditions. These are the known, unknown, and hybrid entry techniques. A 1x3 repeated measures design with full counterbalancing will be utilized.

Sample. Participants will be recruited from local police agencies. No incentives will be offered for participation, but some agencies may allow their employees to participate while on duty. It is expected that approximately 100 police officers will participate.

Procedure. The study will be conducted at Advanced Law Enforcement Rapid Response Training's (ALERRT). Upon arrival, the participants will participate in the standard ALERRT safety preparations. This includes searching the participants to insure that no weapons are brought into the facility and a briefing on the safety rules for the use of Simunition FX Marking Cartridge weapons. During this briefing, the participants will be issued and instructed in the use of the safety equipment. Both the searches and safety briefing will be conducted by certified ALERRT instructors who are either full time police officers or retired police officers. Biographical Information will also be collected at this time.

Following the briefing, participants will be randomly paired and assigned to execute each entry according to a fully counterbalanced schedule. Each pair will be taken into the practice hallway and allowed to practice the entry techniques until they are comfortable executing them. When this is complete, a safety officer will escort the participants to the hall in which the study is being conducted and place the participants in the care of the safety officer for that hallway. This safety officer will verify that the study area is ready, inspect the participant's safety equipment to ensure it is properly attached, issue the Simunition weapon, and direct them to the room to be searched.

The suspect will always be placed in the corner of the room that is searched. The suspect will be played by an ALERRT staff member who is wearing safety equipment and using a Simunition weapon. This staff member will be instructed to fire at the police officers when they enter the room and continue to fire until the police officer's shoot the suspect twice. These exchanges will all be recorded.

After the engagement, the safety office will call cease fire, collect the weapons, and inspect the suspect for hits. He will then escort the participants out of the entry room and to the safe room. The entry room will be reset and then the officers will execute the next assigned entry. This process will be repeated until each team has executed all three entries.

Analysis. Hits will be assessed using a 1x3 ANOVA to examine the number of hits scored by each officer. This analysis will allow the Research Question 1 (Do the different entries affect the accuracy of the first officer?) to be addressed.

The videos will be coded to determine the time it took from the beginning of the entry until the second officer fires. The cameras that will be used record at a standard 30 frames per second. This will allow us to determine when shots occurred to within 1/30th of a second. This data will also be assessed using a 1x3 ANOVA to answer Research Question 3 (Do the different entries affect the speed with which the second officer can fire?)