Analysis of the Daniel Lyons Crime Scene - Part I

Summary to all parts

1. In the homicide of Daniel Lyons, there were two assailants, one firing a .38 caliber revolver and the other a 12 gauge shotgun. The attack was conducted in darkness. Lyons moved about in the bedroom quickly and erratically which made targeting him difficult for the assailants. Nine shots were fired, two of which were potentially fatal: one 12 gauge shotgun blast to Lyons’ lower abdomen and the other to his head with a .38 caliber bullet.

2. Despite nine shots fired at Lyons and his wounding, he was still mobile after the gunfire. The bloodstain and spatter indicate there was a struggle between Lyons and his assailants after the gunfire which included him being twice struck on the head with a hatchet-like weapon.

3. Following the two homicides, the two assailants did not immediately leave the crime scene. Lyons’ body was manipulated postmortem. A cloth was placed on Lyons’ lower abdomen and thighs and his bleeding right hand positioned on the cloth. The cloth was removed and taken with the assailants. The assailants took the time to find and removed the shotgun casings in the two bedrooms and perhaps other items from the house. One assailant “played” with Lyons’ body. Evidence indicates Lyons’ bedroom was searched and at least one item was removed.

Introduction

This report presents the reconstruction of the homicide of Daniel Lyons at 621 Aurora Street, Santa Barbara that occurred in the early morning of May 4, 2009. The homicide was reconstructed utilizing the crime scene images and reports, audio witness accounts and the autopsy images and reports. Part I of this report covers the shootings in the north and northwest part of the master bedroom. Part II will examined the final shots fired, and part III will examine the scene involving the pre- and postmortem manipulation of the body and the conclusions of this analysis.

The naked Daniel Lyons was attacked by two assailants immediately after the Barbara Scharton homicide. Lyons received five gunshot wounds while he was at various locations in the master bedroom on the second floor of his newly-constructed house. He also received a large amount of stippling on his left hand and arm from a sixth shot. Pellets from three shotgun blasts hit him, one of which was on his right lower torso causing devastating internal injury, another hit and remove a portion of his right hand. The other firearm used in the attack was a .38 caliber revolver firing semi wadcutter bullets. Of the five shots fired, two of these hit him: one to the back of his head and the second a perforating, nonfatal wound to his left shoulder exiting his upper back. The attacks on Daniel Lyons and Barbara Scharton were conducted in darkness.

Audio witnesses report two volleys of shots. There was a short interlude of an estimated time by one witness of five seconds between the volleys.
Figure 1. The master bedroom on the second floor where Daniel Lyons died. Due to the lack of a crime scene
diagram where the furniture positions and measurements are supplied, the furniture sizes and positions here are
estimated. No complete image of the ottoman or suitcase were taken, yet these items are important for the crime
scene reconstruction. There appears to be blood on the ottoman that was not properly documented. This diagram
is modified from the architectural drawings provided in the discovery (Bates 3251). The dashed green line is the
assailant route taken when they went from the first floor to the master bedroom. The red upper case letters in the
bedroom diagram indicate the locations of the scenes of the crime scene described in this report. Scene H
(discussed in Part III) is at G.

Following the last of the nine shots fired at Daniel Lyons, there were two blows by a hatchet or
similar weapon on Lyons’ head. There was pre– and postmortem manipulation of the body by
the assailants.

The Homicide

The assailants. The reconstruction of the scene necessitates two assailants. The evidence
indicates two firearms were used: a .38 caliber revolver and a 12 gauge shotgun. Assailant 1
likely had a 5 shot revolver because only 5 shots were fired and no more were fired despite the
victim’s movements after two shooting volleys. Assailant 2 had the shotgun which due to
rapidity and number of shots fired at Dan Lyons, was likely a five-cartridge 12 gauge
semiautomatic shotgun. One of these shotgun cartridges was used on Barbara Scharton. The
remaining four cartridges were fired at Lyons. The Dan Lyons’ attack probably involved the
same two shooters who had murdered Barbara Scharton only seconds before. Assailant 1, who
had a .22 caliber firearm in his attack on Barbara Scharton, shifted to a .38 caliber firearm in his
attack on Daniel Lyons. The shotgun carrying assailant did not take time to reload the one
cartridge after the assault on Scharton.

Assailant entry. A short time after 1 AM on May 4, 2009 the two assailants entered the home
at 621 Aurora Street, Santa Barbara, California. It was likely the assailants were unaware of
Figure 2. Two positions for the trajectory rod for the .38 bullet which penetrated the left second drawer from the floor on the side of the bedroom opposite the bed. The trajectory of this bullet is uncertain, which places uncertainty in the position of the shooter if considering this evidence alone. The reconstruction presented in this report has the trajectory for this bullet from the shooter standing to the right of the entry into the bedroom (Fig. 1 to the right of “A”; Fig. 2 right image, to the right, off image). Other evidence indicates this, but this error injects uncertainty into the reconstruction. An additional error is the lack of a trajectory rod for the second bullet strike in this set of drawers (at arrow, right image).

Figure 3. The .38 caliber bullet wound to Daniel Lyons left shoulder with a trajectory rod in place. No angle measurements were made. The victim was in the process of ducking when he received this shot. The bullet that made this wound likely was the upper strike in the cabinet drawer (Fig. 2, right, at arrow).
Scharton being in a first floor bedroom rather than the master bedroom on the second floor of the house. It is probable that when the assailants realized their victims were separated, they quickly devised a plan to attack her, carried it out and then proceeded with the attack on Daniel Lyons.

The pattern of projectile strikes and bloodstains show that Daniel Lyons first encountered his assailants on the north side of the master bedroom (Fig. 1 at A).

**Deficiencies of the crime scene processing.** There were a number of errors made in the processing of the crime scene of Daniel Lyons.

1. A requirement of crime scene reconstruction is an accurate diagram, to scale, incorporating all measured furniture items as well as the position of the body in the diagram (Geberth, 1990). Yet, the criminalists in this case failed to provide any measurements of the Daniel Lyons or Barbara Scharton crime scenes. Without a crime scene diagram, information instrumental in the reconstruction of the homicide could ultimately affect the accuracy of the scene reconstruction and the conclusions derived from that reconstruction. The lack of a crime scene diagram made this reconstruction more difficult.

2. Images of the trajectory rods were taken in place in the crime scene, but neither horizontal nor vertical angles were measured. Images of these rods do not provide accurate information as to angles which is also true for images of trajectory rods in autopsy images (Burnett, 2010). Images of the north side of the master bedroom shows a bullet penetration into a set of drawers by a trajectory rod of (Fig. 2). Unfortunately, there are two different orientations of the trajectory rods shown in images for this bullet strike (Fig. 2) and without angle measurements we cannot determine, based on these images, where the .38 shooter was standing when firing this and the bullet strike in the next drawer above. An autopsy image of Daniel Lyons shows a trajectory rode in place where a .38 bullet penetrated his left shoulder (Fig. 3). Obviously, he was crouching when he received this bullet. If this and other trajectory measurements were properly made, Dan Lyons and the shooter could be positioned in the bedroom with more certainty when and where Lyons received this wound. No trajectory rod for the second bullet hit in the north cabinet drawer was shown (Fig. 2B)

3. The feces were never identified at the scene. There are objects in the crime scene images which in this report are identified as feces. For positioning of the victim in the reconstruction, it is important to distinguish feces from coagulated blood (Fig. 4), which appear similar in the unenhanced images. The feces were best defined in the crime scene images by image enhancement (false color imaging, Fig. 4E).

4. The crime scene was modified during processing and imaging so that in review of the images for the reconstruction, the original position of the curtains, suitcase and perhaps the ottoman when the criminalists first entered the bedroom is uncertain. The north bedroom curtains (Fig. 5) were manipulated during the scene processing apparently to adjust the lighting for scene imaging. Did the criminalists not realize that the curtains were part of the crime scene?

5. Contrary to standard protocol there was a lack of close-up images of the bloodstains with scales.

6. There was no attempt by the criminalists to document blood associated with the pile of tempered glass at the sliding glass door. There was no attempt to clear off the glass shards to determine if blood was deposited on the carpet prior to the breakage of the glass.
Figure 4. Images of the Daniel Lyons crime scene, northwest bedroom, showing bloodstaining, feces and apparent combination of bloodstain and feces. A. image without annotations. B. Same image but with labeling of the bloodstains and feces on the carpet. The on-scene criminalists erred by not carefully identifying each “deposit” on the carpet. The smears on several of the stains suggest a person or persons were stepping in this area. C. A particularly problematic area of the northwest crime scene where it appears feces and bloodstain are together. 1– drawer is open in this image and closed in others; 2– the window is open in other images; 3– the curtains are in different positions in the images; 4— the suitcase is in a different position in other images. D. An enlargement of the boxed area in C. E. False color rendering of the image in D which defines some of the objects as likely feces (indicated). A linear modification of the bloodstain is also notable and outlined by the red lines at a right angle to each other. This can be seen in D and appears to be caused by the bottom drawer facing of the west cabinet. The drawer was removed from the cabinet and replaced while the bloodstain was wet. The edges of both the suitcase and ottoman are rounded and could not have created this feature.
Figure 5. The north bedroom curtains. A. The curtain at the time of the shotgun blast to the carpet was likely elevated off the floor in that it did not receive shotgun blast damage or carpet debris. B. Scene sometime after initial processing by the criminalists. The window was opened, the drapes moved to the right and the suitcase moved off two major bloodstains (at arrows). All these items’ original positions need to be incorporated into a reconstruction. The lack of specific bloodstain imaging with scales made the reconstruction effort difficult.

Figure 6. Crime scene reconstruction of bullet and shotgun pellet trajectories proposed by criminalist Ullemeyer. A and B. Two proposed trajectories for the Scharton homicide (see Scharton report: www.meixatech.com/SCHARTON HOMICIDE.pdf). Which one was used in trial is uncertain as of this writing. However, both scenarios do not take into account the actual trajectories and distances of the .22 firearm from the victim. The 12 gauge shotgun pellet trajectory angle in B is likely but the indicated distance is not (assuming the end of the arrow is the muzzle location). C. The shooting scene reconstruction for Daniel Lyons. This appears to be the final proposal of five different submitted reconstruction images. Which was used in trial is uncertain. All proposed trajectories and distances do not match the evidence except for the two shotgun blasts (blue arrows) at the center of the image.
7. There simply cannot be one shooter as claimed by the prosecution in trial. For instance, take the homicide of Scharton (see the Scharton homicide reconstruction, www.meixatech.com/SCHARTON HOMICIDE.pdf). Contrary to prosecution criminalist Ullemeyer’s reconstruction (Figs. 6A and B), Scharton’s right arm wound is a contact wound. The chest wound is near contact – no way could either of these have been from where indicated by Ullemeyer. The .22 under chin wound: the trajectory is from Scharton’s left to right – the shooter was standing at Scharton’s left when this bullet was fired. It was also fired after the shotgun blast. She was sitting up for three of the .22 shots and on her back for the shotgun blast and .22 under-chin shot. This reconstruction (Figs. 6A and B) is pure fantasy. Ullemeyer reconstruction for Daniel Lyons’ homicide (Fig.6C), the trajectory rods in the north cabinet and the west wall do not correspond to his reconstruction. The shotgun blast to the floor (lower rt. blue arrow), the muzzle had to have been right at the carpet. The .38 shooter had to have been standing at the right corner of the room in the image for the two .38 bullet strikes the left side of the window (the two yellow arrows misrepresent the trajectory). Ullemeyer’s reconstructions have reached a level of incompetence unparalleled in my experience.

The Daniel Lyons’ Crime Scene Reconstruction. As in the Jackson Daniels case (Burnett & Sabow, 2010) timeline graphics of the scene best portray this unusually complex reconstruction. But unlike the Daniels reconstruction with the shooter essentially stationary, both the shooters and the victim were in motion during the shooting. Audio witnesses noted two volleys of shots, with and an interlude by one estimate of five seconds. The crime scene is broken down into scenes A through H, where each scene is defined by the movement by the shooters and/or victim from one area of the room to another. Nine shots were fired at the victim. Although both shotgun pellets and .38 bullets hit the victim multiple times, none were immediately fatal. After the final shot Daniel Lyons appears to have struggled with his assailants and was twice hit on his head with a hatchet-like object. But this crime scene reconstruction does not stop with Lyons’ death. One or both of the assailants manipulated Daniel Lyons’ body pre- and postmortem (scene H).

For scenes A to E, each scene analysis has graphics each of which are defined by one or two shots from either the .38 revolver or 12 gauge shotgun. The red arrows show bullet/shotgun pellet horizontal trajectories as best estimated from the projectile strikes and bloodstains/spatter. The green arrows show the estimated direction of movement of either assailant or victim. The dotted green lines and dashed lines trace the victim’s path in the scene. Scenes F, G and H occurred after the gunfire and involve physical interactions between the victim and one or both of assailants.

Assailants enter Daniel Lyons’ bedroom. Daniel Lyons was awakened by the gunfire on the first floor at Barbara Scharton. Barbara also could have screamed. Before Dan could understand what was happening he likely heard footsteps approaching. The shooter, who previously had a .22 revolver, now had a .38 caliber revolver in hand, was first to enter Lyons’ bedroom. Several yards behind was the shotgun toting assailant. Lyons had gone to the north side of the bedroom prior to the attack and interacted with the .38 shooter. The room was dark and remained dark for the entire attack and afterwards.
Crime Scene Analysis

The first two shots - scene A (Figs. 7 and 8). The assailants entered the master bedroom. The assailant with the .38 revolver encountered Dan Lyons in the north part of the bedroom (Figs. 1 at “A,” 7A). The shotgun toting assailant was behind the first assailant and either was not in a position to fire at the victim or he waited until the first shooter discharged his revolver a couple of times before firing his shotgun at the victim. In this first part of scene A, Daniel Lyons, perhaps in an attempt to disarm the .38 revolver shooter, reached for that firearm. The .38 shooter responded by firing a shot at Lyons. Lyons’ left hand was close to the muzzle and it received a massive exposure of high energy powder fragments, resulting stippling from the hand (Fig. 7B) up the arm to almost the elbow (Fig. 7C). The .38 bullet failed to strike Lyons and entered a drawer in a built-in cabinet on the north wall under the window (Fig. 7D).

Either the assailant or Lyons backed up putting a little more distance between them (Fig. 8A). The second assailant continued his approach. The assailant carrying the .38 revolver fired a second shot which went through the left shoulder of Lyons and exited from his upper back (Fig. 8B). Since the second .38 shot was higher than the first, this was the second bullet to hit a drawer in the cabinet above the first strike in the cabinet (Fig. 9C, at upper arrow). It appears that a curtain was position in front of the cabinet and was an intermediate target for this second bullet (Fig. 8D). There is no evidence of the first .38 bullet strike on the curtain, but there appears to be a soot deposit (Fig. 8E, circle). The scene criminalists did not note these features on the curtain. If the curtain does not show two bullet holes, the scenario of these two shots could be modified. The order of these shots could be reversed.
Figure 7. Scene A, shot 1 .38 caliber. A. Floor diagram of the master bedroom showing the first part of scene A. The sizes of the objects are estimated. The first shot (red arrow) was by the .38 revolver. Dan Lyons’ left hand was close to the muzzle of the revolver for this shot. The bullet struck the north built-in cabinet under the window. The assailant with the shotgun was moving into position, as indicated by the larger green arrow. B. The left hand with stippling. The hand was close to the .38 revolver’s muzzle so that it received quite energetic powder particles which penetrated the skin. C. Daniel’s left arm showing extensive stippling along the medial distal part of the arm. D. The bullet for the first .38 shot went into the cabinet (likely the bullet hit at the lower arrow). The upper arrow points to the bullet hole of the second .38 shot from this scene.
Figure 8. Scene A, shot 2, .38 caliber. A. Scene diagram showing the likely positions of the assailants and victim at this shot. The shotgun shooter was moving into position for his first shot. Lyons knocked over the suitcase at this shot or the previous one. B. This .38 bullet went through Lyons’ left shoulder and likely was the second bullet to hit the north cabinet (Fig. 7D). C. The north cabinet of drawers; box is enlarged in D. D. Apparent bullet hole in the drapes which corresponds to the upper bullet drawer hit. E. A discoloration (within the circle) on the drape which might be soot. Image is grossly sharpened to accentuate this apparent defect.
**Shots 3 and 4, shotgun blasts - scene B. (Figs. 9 and 10).** The shotgun toting assailant came into position and was in some position on the ottoman. The close proximity of the barrel to Lyons gave him the opportunity to push the shotgun away from him. The shotgun fired at the Lyons, missing him entirely (Fig. 9A). Lyons also had rotated slightly toward the north wall/cabinet (Fig. 9A). The shotgun muzzle was close to the floor and the blast hit the carpet at the base of the cabinet of drawers (Fig. 9B) that was previously hit with the two .38 bullets. The shotgun blast to the carpet appears to have been close enough (a quite small entrance hole can be seen (Fig. 9B)) that likely a substantial amount of the propellant gases accompanied the pellets into the carpet. Evidence indicates a large amount of dust was produced by this shot which is consistent with a concentrated pellet mass and gas in the target hit (see section III).

The shotgun pellet mass hit several inches out from the built-in cabinet and exited at the base of the cabinet spewing carpet fragments and dust into the room. The curtain covering the widow and cabinet went to the floor (Fig. 9C) and should have been hit by part of the shotgun blast and debris deposited if it were in place as shown in Fig. 9C. It appears Lyons had engaged the curtain during his retreat from the .38 shooter lifting it off the floor so that when the first shotgun blast hit the carpet in front of the cabinet and exited, the curtain was not in place. There is no image evidence the curtain received any direct carpet debris and dust from the shotgun pellet hit. Lyons grabbing the curtain panel and placing it in front of him had the effect of obscuring his body shape so that the shotgun shooter was unsure of Lyons’ body location in the darkness. Lyons was not so lucky with the second shotgun blast.

The second shotgun blast was fully into Lyons’ right side at the location shown in Fig. 10A. This is “Gunshot Wound No. 3” in the autopsy report (Bates 868 –869). It appears that the shotgun shooter changed his position on the ottoman to deliver this shot (Fig. 10A). Curiously, assailant 1, the .38 shooter, did not shoot again until the second volley of shots (see part II of this report). The shotgun pellet wound to Lyons’ right side was devastating. The shotgun muzzle was close enough to Lyons upon this discharge that there were no satellite pellet wounds around the entrance wound for the main mass of pellets (Figs. 10B and 10C). Upon receiving this wound, Lyons dropped to his hands and knees. There was extensive bleeding and the dropping of some mesenteric tissue that extruded from the wound (Figs. 10D and 10E) at the location where he received this shotgun blast. Lyons’ movements now became quick and erratic as shown by widely distributed drip bloodstains. He paused several times leaving heavier bloodstains and fecal piles on the carpet. The bloodstains and fecal piles indicate at one point Lyons backed on his hands and knees, toward the northwest corner of the room (Fig. 10D).
Figure 9. Shot 3, 12 gauge shotgun. The first 12 gauge shotgun blast in the master bedroom. A. Proposed positions of the victim and assailants in a diagram of the bedroom. The victim was backing from the his position after he received the .38 bullet wound to his shoulder. Considering the position of the ottoman and the location of the pellet hit, the shotgun shooter likely climbed partly onto the ottoman to awkwardly try to fire at the victim. B. Shotgun pellet damage to the carpet at the base of the built-in cabinet under the window. The pellet cluster hit several inches out from the cabinet and deflected up at the edge of the carpet causing dust and carpet debris to be spread over the cabinet face and over the carpet surface. C. A similar image as B, but the curtain is in place. This curtain could not have been covering the cabinet when the shotgun pellets hit this position.
Figure 10. Shot 4, 12 gauge shotgun. The second shotgun blast hit Lyons in his right side. **A.** The ottoman acted as a hindrance to the shotgun shooter, but he managed to get close enough to deliver a direct hit to Lyons for his second discharge in this room. The shotgun muzzle was close enough to the victim that upon discharge, there were no satellite pellet wounds to his abdomen. **B.** The shotgun muzzle was within three feet to Lyons’ right side so that there were no satellite pellet wounds as this image shows. Mesenteric tissue was forced out the wound as a result of the blast. **C.** The body pulled by a criminalist to its left side at the scene that better shows the shotgun wound on the right side of the body and bloodstains on the back of the body. **D.** Image of the location where Lyons received the devastating shotgun pellet wound to his right side. Area of box is enlarged in E. Dashed green line and arrow indicate Lyons was backing toward the northwest corner of the room after he receive this wound. **E.** Enlargement of the bloodstain indicated in the box in D. Shown is mesenteric tissue debris with the bloodstain which places Lyons at this location when he received this wound.
**Mid-shooting interlude - scene C (Figs. 11 and 12).**  The audio witnesses reported an interlude between volleys of shots. Estimates of this interlude were “very quick” (Bates 417) and “a pause of no more than 5 seconds” (Bates 938). Witnesses to a incident such as a shooting are usually not accurate in the details of their accounts (Haag, 2006; Burnett, 2010). Haag (2006) notes this is also true for audio witnesses. In the reconstruction of the Lyons homicide a pause between shot volleys is supported (Fig. 11A). During this interlude, Lyons was erratically moving about in the northwest corner of the bedroom leaving blood trails and where he momentarily stopped he left large bloodstains, blood drips and feces (Figs. 11 and 12). The shotgun wound to his side was undoubtedly extraordinarily painful which contributed to his moving quickly and erratically. During this short time period, the two shooters did not fire.

The abdominal wound was actively bleeding. Lyons stopped for short intervals and at one point backed (in a crawl position) with his buttock almost against the north wall. During this part of the attack on Lyons, he was mostly crawling. Lyons was having frequent bowel movements (Fig. 11D, at “F” and Fig. 11E, “FECAL MATERIAL”) as a result of the severe shotgun pellet damage to his lower abdominal area. This scene could have (but unlikely) been revisited by Lyons after the final volley of shots where he also had an actively bleeding shotgun wound on his right hand. The stains within the area indicated in Fig. 12A could also have come from Lyons’ bleeding right hand (see part II) or more likely only from his abdominal wound.

There are blood smears in the northwest corner of the bedroom where it is apparent the bloodstains were stepped in and smeared (e.g., Fig. 11E at “S”). A series of blood drops were also found that were originally under the suitcase (Figs. 12B and 12C) which shows that the bleeding Lyons ventured to this area and the suitcase was moved during the commission of the homicide. Figure 12 also shows blood smearing when someone stepped in this area. In addition, there also was a scrape in a major bloodstain (Fig. 11F at arrows) indicating that a drawer of the built-in cabinet was removed, set into the wet bloodstain, pushed toward the cabinet and then replaced in the cabinet. This aspect of the crime scene will be discussed in more detail in part III.
Figure 11. Interlude between shooting volleys.  

A. Diagram showing a position of the victim and the assailants during the interlude after the first four shots at Lyons. The wound in Lyons right side was actively bleeding. He was moving erratically about in the pink area. He left major bloodstains during this process as well as drip lines of blood.  

B and C. Additional views of this part of the crime scene.  

D. Scene where the feces (F) and bloodstains modified by smearing (S). The dashed green line traces the path taken by Lyons after the shotgun wound to his right side; the perpendicular lines to the dashed are where he paused.  

E. An enlargement of the northwest corner bloodstain and feces. The large bloodstain at the arrow S was smeared in the direction indicated by the arrow prior to the feces being deposited.  

F. False color rendering of E, which allows for better elucidation of the feces piles. The area of the bloodstain where a drawer facing took a scrape out of the bloodstain (as indicated by the arrows).
Figure 12. Interlude between shooting volleys  

**A.** Northwest corner of the bedroom. The area outlined in white show blood tracks from the actively bleeding abdominal wound. Daniel Lyons was moving about quickly and erratically  

**B.** Image taken later in the scene processing where the suitcase was removed to show the underlying bloodstain (white border square).  

**C.** Area of bloodstaining indicated in B and enlarged to show the blood drips as well as a smear.
References for part I.


