

Supplementary Material

This is an English translation of the fictitious crime report used as the episodic narrative in the present study. The 10 incriminating [I] and 10 exonerating [E] critical event details are marked in bold and numbered by order of appearance in the crime report. Numbered lists of the critical details themselves are presented following the report. Two of the critical details [I4] and [E2], marked by asterisks in the story, relate to information that appears at more than one point in the narrative.

A. Crime Report

The city of Haifa was shocked on the morning of July 5, 1965, by news of the murder of a most distinguished citizen. Elijah Shapira, founder and president of one of the largest petrochemical factories in the Haifa bay and a member of the city council for many years, was killed by a poisonous gas released in his bedroom during the night.

The publicity and public interest in the death of such a wealthy and well-known individual, led to the assembly of a special investigation team on the following day. The police investigation revealed the following evidence: At 6 A.M., Shapira was found dead in his bed by the housekeeper, who for years had awakened him at that hour, bringing him coffee to his bed. On his bedside table, she found a one-liter glass bottle, but its cork was missing. When she looked around, she understood that some chemical substance had been released during the night, killing every living thing in the bedroom. Shapira's parrot was lying dead in its cage, and the miniature Bonsai tree in the corner of the room was also dead. **The housekeeper's first thought was that an experiment had gone wrong. Knowing Shapira, she knew he could get out of bed, even during the night, in order to try a new chemical formula that he had just thought of.** She wasn't the only one who thought so. **One of the police forensic experts also suspected that it was an accident. He told the team of investigators about it, but they disregarded his idea—they determined that it was a planned murder, without checking this possibility thoroughly [E₁],** and immediately began searching for the murderer.

Naturally, the deceased's nephew, **who met with him alone a few hours prior his death [I₄*],** was the immediate suspect. The nephew, Jonathan Shahar, was Shapira's only living family relative. Jonathan's parents were killed in a traffic accident when he was 13, and his uncle raised him with devotion ever since. Shapira didn't have a family of his own. While in

his 20's and 30's, when the factory was still in its early stages, he would work around the clock. He was so determined, that sometimes he chose to spend the night in his office chair in the factory instead of going back home, just so he could save the travel time. He detached himself from friends. Years later, when the business was already independent and he had some more time, he had no one left with whom he could spend his free time and he remained lonely—until the accident in which Jonathan's parents were killed changed his life.

Upon hearing about the accident, it was clear to Shapira that Jonathan would be living with him. In the first few months, Jonathan suffered from nightmares and Shapira would take him to the factory in order to distract him in the only way he knew—by various explosions and chemistry experiments. With time, Jonathan became fond of the subject and began taking more interest in it. He read books, heard lectures, and predominantly **learned from his uncle who was the country's leading expert on poisons and agricultural pesticides, until he became an expert chemist himself [I₁]**. Over the years, Jonathan worked in almost every possible role in the factory, and **each time gained his colleagues and superiors' esteem. Everyone who knew him described him as a moral, reliable and trustworthy person. Occasionally he was even laughed at for being so strict on rules, never cutting corners or deviating from his truth [E₂*]**.

He was deeply grateful to his uncle for taking him under his wing after his parents' death, and helping him rehabilitate his life. He appreciated him so much that he wanted to resemble him in every way [E₃]. Over the years, Jonathan, just like his uncle before him, became a "workaholic". In his eyes, vacations were obscene, and the only legitimate reason for missing work was army reserve duty. When he needed to travel abroad for business meetings, he always preferred sending other colleagues in his place or inviting the foreign guests here, at his own expense. All to make sure he wouldn't miss a moment in the factory. So it happened that at the age of 30, a person from such a wealthy family had never set foot abroad.

After years of working closely together, **differences of opinion regarding the management of the factory began surfacing. Jonathan tried to promote new initiatives and reforms in the old fashioned factory, but the old Shapira, who had built the place with his own two hands, refused to move forward. He continued to dictate the factory's policy even after he retired, and demanded to be updated on any petty affair. Every evening, Jonathan would arrive at Shapira's room and update him on everything that was happening in the**

factory. Without Shapira's approval, it was impossible to carry out a decision [I₂]. Therefore it wasn't surprising that on the night of the murder, like any other night, Jonathan came to his uncle's room in order to update him on the day's affairs. **Before entering, Jonathan told the housekeeper, who usually served sweet refreshments during their meetings, that he and Shapira have a lot to talk about, and asked her not to enter and interrupt them in their meeting [I₃]. The two were alone for long hours, and Jonathan left to go to his second floor room a bit after 23:30 [I₄*].** He admitted this, and the housekeeper testified the same. She said that around 23:30 Jonathan left his uncle's bedroom, and paused at the bottom of the stairs in order to speak with her. **The police noted the following two suspicious activities:** First, **Jonathan went back to Shapira's bedroom in order to retrieve, according to his claim, a bag that he had forgotten [I₅].** Additionally, **Jonathan closed the bedroom door after leaving, which was unusual [I₆].** However, the housekeeper who knew him from a young age and could sense his mood better than anyone else, **said he behaved in a calm fashion, not like someone who had just killed a man [E₄].** Subsequently, Jonathan went up to his second-floor room and collapsed on his bed, while she went straight to her room, without peeking into Shapira's room.

The next morning, Jonathan woke up to the sounds of police sirens, and went down in a panic to see what happened. **When the housemaid told him what happened he was in shock. For a few minutes he muttered sentences such as "this can't be happening" or "this isn't true," and eventually calmed down only after the paramedics gave him a sedative [E₅].** They helped him go up to his room and laid him in his bed.

In parallel, the investigators began questioning the 75-year-old housekeeper and elicited her testimony. She had retired 10 years earlier, but did not see fit to leave after so many years. She had stopped cleaning and running the house, but kept cooking her fabulous food. Shapira paid for her expenses and made sure that she would grow old with dignity. The policemen, who knew she couldn't possibly murder Shapira because of her trembling condition, relied on her help quite a lot. They tried to understand how the murderer entered the house to begin with. To their surprise, **the lock on the main door was intact and there weren't any signs of forced entry, a fact that usually suggests the cooperation of someone inside the house. Even the windows that might have been used to break in were closed because the air-conditioning was working around the clock during July's heat [I₇].** When the investigators turned to check the alarm system they found out that for some reason, **the alarm system that Shapira had installed a few years back had malfunctioned, and began**

emitting strange beeps the day before Shapira's death. After a failed attempt to fix the system himself, **Shapira asked Jonathan to call for service and order a technician, but he didn't do so. Jonathan claimed he was preoccupied with work and didn't manage to do so in time [I₈].**

More and more policemen poured into the estate and among them also a coroner, who was the first to examine the body. He searched for signs of violence and other forensic evidence in order **to assess the time of death, and determined it was most likely between 22:00 and 04:00 in the morning.** Although this is a very wide range, **this determination is significant because it was known that Jonathan was in Shapira's room during that time window [I₄*].** Aside from determining the hour, he also **found a very interesting note in Shapira's pocket. The note was assembled from scraps of newspaper that were joined together to create a warning: "If you do not surrender, I will kill you".** Encouraged by the discovery, the coroner searched for fingerprints on the note. Other than Shapira's own fingerprints, he also found a partial fingerprint that wasn't cleaned properly by the sender, and compared it with the fingerprints the police collected. **He tested the fingerprints of the factory's employees, the house keeper and Jonathan, but didn't find any match [E₆].** Another path that was investigated was the **origin of the newspaper that was used to create the note.** A persistent investigation successfully led to its origin and revealed that it was printed using a special technique that has not been used in Israel for the past 40 years, and is presently being used only in a few African countries. Naturally, this led the investigators to doubt Jonathan's involvement, as he had never left the country's borders [E₇].

In light of all that the investigators heard about Jonathan from the people around him, it didn't seem like he was capable of committing such a cowardly act [E₂*]. That being said, the investigators couldn't ignore the fact that he would be the main beneficiary of the will, and with the lack of other motivated suspects, the investigation continued to focus on him. According to the will, Jonathan would inherit Shapira's house and half of his fortune, which was estimated at 4.5 million USD. The rest was due to be donated to the municipal hospital. The will, which was drafted 5 years prior, was never a secret, a fact that strengthened the investigators' suspicion of Jonathan [I₉]. They petitioned the court for a warrant to search Jonathan's room, and immediately upon receiving the approval, they appeared unannounced at his home. They searched every part of his room and emptied all the closets. Eventually, **they found a cork in one of the drawers.** The investigators weren't

certain that this was the missing cork, since the bottle was a fairly standard instrument in the lab industry. **Still, it fit the type and size of the chemical bottle that was found in Shapira's room [I₁₀].**

Hurt and frustrated from the accusations, **Jonathan volunteered to undergo a polygraph test, even though by Israeli law, an individual cannot be forced to do so [E₈].** A group of professionals tracked his physiological indexes and searched for suspicious signs. They asked him again and again, for hours, whether he had killed his uncle. He was tired and frustrated but the answer and his physiological signs didn't change. **The conclusion was clear and unequivocal – Jonathan's version was found to be reliable [E₉].** These two facts, the fact that he volunteered to undergo the test on his own initiative together with his passing result, were points in his favor. **Another mystery that the police had difficulty explaining concerned the type of poison that killed Shapira. The coroner who examined the body determined that the active ingredient in the poisonous gas was methane, which has a unique chemical "fingerprint". This means that while working with the material, miniature particles should accumulate in the user's lungs. To the best of the researchers' knowledge, different masks can provide protection from this danger, but not completely prevent it. Therefore, it is highly likely that traces of these materials would be found in the murderer's lungs, yet tests that were conducted on Jonathan did not find any methane traces in his lungs [E₁₀].**

B. Critical Event Details

These are translated lists of the 10 incriminating and 10 exonerating critical details embedded in the crime report.

Incriminating Details [I₁ - I₁₀]

1. Jonathan was an expert in the chemistry of poisons and agricultural pesticides.
2. Jonathan and his uncle argued often about the proper way to run the factory. Elijah refused to relinquish control over factory policy even after he retired. Without Elijah's approval, it was impossible to carry out a decision.
3. Before entering Elijah's room, Jonathan asked the housekeeper, who usually served refreshments during their nightly meetings, not to interrupt them.
4. Jonathan met with Elijah alone in his bedroom for several hours, partly overlapping with the coroner's estimated time of death (sometime between 22:00 and 04:00 in the morning).
5. After leaving Elijah's room, Jonathan returned to the room to retrieve (according to him) a bag that he had forgotten.
6. Jonathan closed the bedroom door after leaving, which was unusual.
7. There were no signs of forced entry to the house, a fact that usually suggests the cooperation of someone inside the house.
8. The day before Elijah's death, the house alarm system had malfunctioned and Elijah asked Jonathan to call a technician for service. Jonathan failed to do so, claiming that he was preoccupied with work.
9. Jonathan was the prime beneficiary of Elijah's will, the contents of which were not secret. In his will, Elijah left Jonathan his house and half of his fortune.
10. Investigators found, in one of the drawers in Jonathan's room, a cork that fit the type and size of the chemical bottle that was found in Elijah's room.

Exonerating Details [E₁ - E₁₀]

1. Elijah's housekeeper's and one of the police forensic experts thought that Elijah's death might have been an accident. However, the primary investigators disregarded this possibility without checking it thoroughly.
2. Jonathan was highly respected by the people around him, who described him as a moral, reliable and trustworthy person. He did not seem capable of committing such a crime.
3. Jonathan was deeply grateful to his uncle for taking him under his wing after his parents' death, and helping him rehabilitate his life. He appreciated him so much that he wanted to resemble him in every way.
4. The housekeeper who saw Jonathan after he left Elijah's room, and who knew him from a young age, said that he behaved in a calm fashion, not like someone who had just killed a man.
5. When the housekeeper told Jonathan what had happened, he seemed to be in shock, muttering sentences such as "this can't be happening" or "this isn't true," eventually calming down only after the paramedics gave him a sedative.
6. The partial fingerprint on the blackmail note found in Elijah's pocket did not match Jonathan's fingerprints.
7. The investigation revealed that the scraps of newspaper composing the blackmail note were printed using a special technique presently used only in a few African countries, yet Jonathan had never travelled abroad.
8. Jonathan volunteered to take a polygraph test, even though by law he could not be forced to do so.
9. The polygraph test indicated that Jonathan's version of the events was reliable.
10. The coroner's examination determined that the active ingredient in the poisonous gas was methane, which has a unique chemical "fingerprint" that should have left traces in the killer's lungs. Yet, no such traces were found in Jonathan's lungs.