

The Legend

About five hundred years ago, the Incas hid hundreds of millions of dollars of gold and silver from the invading Spanish conquistadors in the Llanganatis, a remote mountain chain in Ecuador. Gold and silver had no intrinsic monetary value to the Incas. Rather, the precious metals were a tangible way to worship their gods, the sun and the moon.

The Incas, the largest pre-Colombian civilization in South America, amassed this fortune in only one hundred years, expanding an empire along the Andes with over ten million people, spanning one thousand miles including portions of modern-day Colombia, Ecuador, Peru, Bolivia, Chile, and Argentina.

Yet everything collapsed when the Spanish arrived in 1532.

The Inca empire was notable for its architecture. Machu Picchu, discovered on a mountaintop in 1911, is a stunning example. Their ability to work with gold and silver was equally remarkable, although they did not have a practical knowledge of advanced metallurgy.

The Incas also lacked a written language. Everything we know is through the prism of the Spanish, typically the religious. The Incas, however, kept meticulous records with *quipu*, a complex counting device of colored ropes and knots, but few quipus have survived, and scholars still struggle to interpret their meaning.

Historians debate the cause of the abrupt collapse of the Incas when Francisco Pizarro, the leader of the Spanish conquistadors, arrived in Cajamarca, Ecuador. Many believe the Inca defeat was the combination of a civil war between two brothers battling to assume leadership of the empire, the scourge of smallpox brought to the New World by the Spanish that decimated the Inca population, and the superior weaponry of the Spanish. Other scholars suggest “defeat” is a misnomer. They suggest the Inca commoner may have viewed the Spanish as liberators from the Inca empire cobbled together by vanquished tribes.

Despite no written language, one story has persisted—the legend of the lost Inca gold hidden in the Llanganatis. In 1532, Francisco Pizarro captured Atahualpa, the Inca King in Cajamarca. Atahualpa, understanding the Spanish obsession with gold and silver, offered Pizarro a ransom of the precious metals for his freedom. Atahualpa promised to fill one room with gold and two other rooms with silver. Pizarro accepted the deal.

In late 1532, the gold and silver trickled into Cajamarca. But Pizarro, becoming increasingly impatient with the slow flow of the precious metals and concerned the Inca were planning an attack, executed the Inca King the following summer in 1533.

At the time of the execution, General Rumiñahui, a half-brother of Atahualpa, along with 40,000 Inca soldiers were en route to Cajamarca with the rest of the ransom. Upon hearing of the execution of their King, General Rumiñahui turned his troops back into the Llanganatis, where, according to legend, he hid the rest of the ransom in the mountains. Today, the Llanganatis is a national park. Yet it remains one of the most remote regions in the world, with much of the eastern park still unmapped.

Over the last five hundred years, many have searched for the gold. Some have perished, but no one has found it. There have been clues, maps, guides, expeditions, and books written

about the treasure. A few have claimed to have found a portion of the gold, which has only intensified the search for the rest.

The story is now a cliché. We already know the outcome before the adventure even begins. The only mystery is how badly it will end.

It is the way of the Llanganatis.

Perhaps the time has come for a new ending, a new outcome.

This is the story of how a Middle Eastern arms dealer dupes an unlikely trio of a dealer in Inca antiquities, a gifted undergraduate, and an archaeology professor to virtually search with artificial intelligence and state-of-the-art satellite imagery for the lost Inca gold.

But remember, those on the cutting edge, bleed.

The Tutor

Thursday, October 11, 2018

Computer Lab

The University of Maine

Orono, Maine

Tom was passing time in the computer lab, waiting for yet another student who needed his help. He was already tutoring about a dozen students who had panicked at this point in the semester, realizing they were in over their heads.

He was a senior in the Honors College with dual majors in anthropology and computer science, tutoring in both. Most thought it an odd combination, but he had a singular purpose in choosing these two.

Tutoring was decent money, and he was good at it. But the students he tutored were often failing, just going through the motions, not putting in the effort. He got little satisfaction helping a laggard elevate their grade to a C, but he needed the money.

Tonight, he was meeting a new student who needed some help with COS 140 - Foundations of Computer Science, a popular course for computer science majors.

The computer lab was in the basement of the Memorial Union, a sprawling building in the middle of campus. At night, the open room with five long wooden tables, each with a complement of four computers, was usually empty. The blurry-eyed students had shut down the computers hours ago. Without

the constant whirling of cooling fans and hard drives, the lab was quiet, and he often studied or tutored here.

But tonight, he was reading a book for fun, *Valverde's Gold*, about the search for the lost Inca gold in the mountains of the Llanganatis in Ecuador. Tom always enjoyed a treasure hunt ever since he was a kid. Maine had plenty of stories about pirates like Captain Kidd or Blackbeard, but nothing matched the legend of the lost Inca gold.

Tom was deep in the Llanganatis when the lab door opened. Her soft footsteps gradually brought him back.

As she approached, her blond hair swayed. She wore a light green blouse and jeans. He stood up and looked down to meet her blue eyes. Even in the harsh overhead LED light, she had a softness. He wished he'd taken a few minutes to comb his hair and wear a clean T-shirt and maybe real pants instead of cargo shorts.

As she extended her right hand, his throat tightened. What was her name? His mind was blank. He couldn't remember her name.

"I'm Jenny, Jenny Kellogg. Are you Tom Kirkpatrick?"

Tom extended his right hand. With his left hand, he swept back his light brown hair, catching his fingers in a knot. He needed a haircut.

Clearing his throat, "Ayuh, I mean yes. Nice to meet you, Jenny."

Tom just stared. She released his hand.

"Nice T-shirt. I was thinking of joining Sub-5. Do you run a lot?" asked Jenny. Sub-5 was a local running club.

"Yeah, but not too many races anymore."

"I like running too. Thanks for helping me out. I'm a little overwhelmed. The course description said no prerequisites or mathematical skills, and now it's too late for add-drop. Dr. Wade recommended you. He said you were the best, so here I am."

His mouth was dry. Swallowing didn't help. Was the slight tremor from too much coffee? He cleared his throat again.

“Okay—no problem—ah, let’s get to work. Is there something in particular you want to work on? Dr. Wade didn’t give me a lot of direction.”

“Well, I’m struggling with what he covered this week. How about we start there?” she said, pulling her shoulders back to slide off her backpack.

He closed his book and scuffed-up laptop and stuffed them into his backpack. He led her to a smaller room off the front of the computer lab. The ten-by-twelve foot room had a large, worn oak table at the far end by a whiteboard. Centered on the table was a well-used desktop computer and keyboard with one monitor and another monitor askew, which Tom used to watch the student work.

Tonight, however, he pulled his heavy oak chair, screeching across the linoleum, to just behind her. He booted the computer as she settled in front of the keyboard.

Her shoulder length hair smelled fresh.

She also seemed a little uneasy, which oddly helped him relax, unless it was because he was too close. He backed off a bit while the Acer did its BIOS check.

“Okay,” said Tom, as the home screen flickered on. “This week was the introduction to higher-level programming languages. Let’s start there.”

He often found these tutoring gigs hopeless, but after a few minutes, he realized Jenny understood most of the core principles. She was not one of his typical tutoring students.

At the end of the hour, Jenny pushed her chair back from the table, just missing Tom’s knee. “That was helpful, Tom. Thanks for getting me back on track.”

Oh no, thought Tom, is this just a one-off?

“Does this time work for you next week?” she asked.

Tom cleared his throat. “Yeah, this is probably the best time to meet.”

Jenny stood up and slipped on her backpack. His throat tightened again. He put his hands on his knees to hide his tremor. He had never done anything like this before with the dozens of students he’d tutored.

As he stood up and hoisted his backpack, he said, "I know it's getting late, but do you want to grab a bite at the Bear's Den?" The popular café was one floor up from the Computer Lab.

"How about a rain check? I have a quiz every Friday in my English class, and I haven't cracked the book yet." As Jenny got up, she simply said, "Same time next week?"

"Sounds good. Oh, we should exchange phone numbers in case one of us needs to reschedule," suggested Tom. "What's your number and I'll text you my contact info?"



It was about a five-minute drive back to the "Pizza Palace" in downtown Orono, the apartment Tom shared with Dave, who had just finished his shift downstairs at Pat's Pizza. Dave was stretched out on the small, tattered couch, still wearing his white apron dabbed with red sauce. Although Pat's was a full-service restaurant, Dave spent most of his time making and baking pizzas.

Dave had been Tom's roommate since they had started college, first in Gannett Hall and then at the Pizza Palace. Dave was already working at Pat's Pizza when the Pizza Palace upstairs became vacant before their sophomore year. They'd been in the apartment ever since.

"Hey, how did it go?" Dave asked without looking up from his book.

Tom usually just grunted. But not this time. "Great."

His roommate looked up. "What did she look like?"

Tom smiled as he remembered the scent of her hair. And what else he remembered, he did not want to share.

"Nice."

"Nice? What's that?"

"She was blond with shoulder-length hair, a little shorter than me, and she likes to run. I've never tutored anyone who picked up material so quickly."

"Blond, tall, skinny, nice, whatever that means, and probably a nerd. She sounds like a real gestalt and is perfect for you."

He wasn't sure what gestalt meant, but Dave said it with a knowing nod, so Tom agreed.



When Jenny entered her dorm room in Somerset Hall, her roommate, Robin, was lying on her bed, tapping away on her iPhone. She lifted herself up on her elbows. "How did it go? Are you any smarter now?"

"Yeah. It went really well."

"Was he a nerd?"

"He was smart and nice. And he likes to run, too."

"So, he was a nerd."

"Yeah, a really nice nerd. I felt really comfortable with him. He wasn't what I was expecting."



Wednesday, October 17, 2018

Orono, Maine

The next Wednesday, Tom sent Jenny a quick text message. He hoped if they met earlier, maybe this would give them a few minutes at the Bear's Den after tutoring.

< Hey Jenny. Tom here. Any chance
we could meet at 7 instead of 8 tomorrow? >

< Sure. See you then. >

The Arab

123 REPORTED DEAD, 550 INJURED AS ISRAELIS BOMB P.L.O. TARGETS IN BEIRUT AND SOUTH LEBANON

New York Times - Saturday, July 18, 1981 - Front Page

Friday, July 17, 1981

Beirut, Lebanon

He spent hours swinging on the rusty play set in a scruffy neighborhood park near his gray apartment building. Swinging cooled him off. When he leaned way back and touched the clouds with his toes, the swing squeaked. Only a few of his friends dared to swing high enough to hear it squeak.

Today, he was alone on the play set. Most of his friends had left the city with their families, worried about the escalating Israeli attacks on Beirut.

He saw it before he heard it. A bright light silhouetted his apartment building, followed by a blast that almost shook him from the swing. Then the heat and sand hit his face. Staggering off the swing, shielding his eyes, he watched his home slowly wrench to the ground.

He ran away, but no matter how fast he ran, he could not shake off the fine gray dust that covered him from head to toe.

He ran until he heard the siren from a fire truck careening down Rue Baghdadi.

Then he turned and ran back, following the siren.

Omar Al Tajir was twelve years old when the Israeli airstrike killed his parents in the Fakehani neighborhood in Beirut.

His uncle arrived the next day and took him away to his vineyard in Zahlé.

He still cannot remember the twenty-four hours until his uncle arrived, as he searched the rubble for his parents, squeezing into places only big enough for a child. All he remembers is how alone he felt, a feeling he would never truly escape for the rest of his life.

Years later, his uncle told him he'd found a few survivors in the rubble, but not a trace of his parents. He does not remember. He wonders if it was true.



Despite the constant turmoil while growing up in Lebanon, Omar did well in school and returned to Beirut to attend the American University. He graduated with a degree in business administration and a minor in archaeology, planning to enter the antiquities business.

His junior year was his most formative year, studying archaeology at Birzeit University in Palestine, as part of an exchange program with the American University. At Birzeit, he experienced firsthand the impact of Israeli policies on Palestinians.

During his year there, he met another student, Yahya Ayyash, whom Hamas would later nickname the “Engineer” for his skills making bombs out of ordinary household items. Ayyash was brilliant and passionate, sometimes a troublesome combination. In spite of their different backgrounds, they shared an interest in archaeology, and the young Omar admired Ayyash’s dedication to Palestine. He wished he felt this passionate about something—anything.

Ayyash introduced Omar to Hamas. Soon thereafter, Ayyash asked him to help smuggle essentials like medicines and other necessities into Palestine. With Omar's travel visa, smuggling was much easier for him than for a Palestinian. Although risky, it was an easy decision for Omar. It was only years later that Omar appreciated Ayyash had essentially recruited him to Hamas.

Ayyash also introduced him to the underbelly of Middle Eastern antiquities, from looting to buying to selling.

After graduation, Omar traveled throughout the Middle East networking and building his burgeoning antiquities business. There was a relative glut of undocumented treasures that were difficult to move. He took advantage of this opportunity with his talent for fabricating documentation and provenances. With his comfort in skirting the law, his business and connections expanded throughout the Middle East.



July 1993

Abu Dhabi, United Arab Emirates

Omar was twenty-four when another Israeli bomb killed his uncle who was visiting a refugee camp during the Seven Day War in late July 1993. Omar was living in Abu Dhabi by then, partly to escape the chaos, and partly for his business.

After he lost his uncle, he became more involved in supporting Hamas.

Omar learned to insulate himself with intermediaries. While he procured the weapons, his agents made the actual deliveries. This model would also serve him well in his antiquities business.

Hamas was also a supplier of antiquities. They would acquire the artifacts and then sell them on the black market, which is where Omar typically transacted business. Hamas would then use this revenue to buy arms from him. The circle of life.

Even though they were codependent, Omar carefully used different intermediaries to keep his arms and antiquities dealings separate.



Hamas slowly changed their tactics and became more political. In 2006, they won a majority of the seats in a legislative election in Palestine. For Omar, this meant more foreign aid flowing into Hamas, which meant more money for Hamas to buy more weapons from him.

By then, Omar was an established dealer in Middle Eastern antiquities to the world market. He had amassed a huge inventory. Anyone looking to buy a significant volume would deal either directly or indirectly with him.

His arms trading was also thriving. He ultimately became a major wholesaler of arms and weapons to Hamas. He was also the middleman for various other countries in the region. Unlike many of his contemporaries, Omar preferred anonymity. For that reason, nation-states supplying weapons to the Middle East preferred to collaborate with him.

Omar fully understood the impact of his actions. He slept well at night.



July 2018

Abu Dhabi, United Arab Emirates

Omar was now forty-nine years old. He had remained single and obsessively focused on his work as an established supplier of both black-market arms in the Middle East, and Middle Eastern antiquities to the world. He led a comfortable, albeit solitary, life in Abu Dhabi.

Last week, however, he received a disturbing phone call from an associate at the United Arab Emirates embassy in Washington, D.C., who told him the American government was aware of his involvement in the Hobby Lobby scandal, and they

had uncovered other “information of interest,” a euphemism for his arms trading.

Most of his acquaintances knew he was a collector of Middle Eastern antiquities. Many realized he also traded antiquities on the world market. Only a few knew he financed looting the ancient sites. None of them were aware of his arms dealings.

Omar operated on anonymity. He could not have anyone prying into his other dealings. He knew he needed to leave the Middle East.



September 2018

Abu Dhabi, United Arab Emirates

Two months later, as he sealed a packing container, he reflected upon his move to Colombia. The Hobby Lobby scandal started about eight years earlier when U.S. Customs seized cartons of artifacts from the Middle East bought by Steve Green, the CEO of Hobby Lobby, destined for his Museum of the Bible.

Omar’s problems began in 2017 when the Justice Department filed a formal indictment involving Hobby Lobby for smuggling illegal artifacts into the United States.

The indictment named four dealers, three in Israel and one in the United Arab Emirates. Although he was not the actual “UAE Dealer” listed, Omar had likely supplied some of the stolen antiquities to that UAE Dealer. It was only a matter of time before Homeland Security would uncover his involvement.

The story for Omar, however, went back even further to the March 2003 invasion of Iraq by the Coalition forces led by the U.S. looking for weapons of mass destruction. During the ensuing chaos, Omar had looted the Iraq Museum and then warehoused many of the antiquities. Some of these artifacts were likely included in the sale to Hobby Lobby.

Ultimately, the Green family would work out a deal where the company returned \$1,600,000 worth of artifacts to Iraq and agreed to a fine of another \$3,000,000.

As he oversaw the packing of the last boxes of his abrupt move to Colombia, he made sure each item had a proper provenance and proof of ownership, even if they were fraudulent. Although he was bypassing the United States, he did not want any troubles entering Colombia.

His empty home was now cavernous. He would miss Abu Dhabi, but he was always a loner and ready for a change.

After looking at several countries, Colombia emerged as his best option, as it already had strained relations with the United States, and offered enough stability for him to live comfortably. He wanted a country where he could enjoy his wealth, but still be at arms-length from the United States. He also needed a warm climate—and a new adventure.

The Bear's Den

Thursday, October 18, 2018

Computer Lab

The University of Maine

Orono, Maine

Tom had been waiting all week for tonight. He was more presentable with a light blue short-sleeved shirt, and he had combed his hair, which was getting long, but nothing to be done about it now. Although the session wasn't until seven o'clock, Tom left the Pizza Palace early to grab a quick bite at the Bear's Den and then hang out at the Computer Lab. He wanted to finish *Valverde's Gold*.

Jenny arrived a few minutes early. As they settled in front of the monitor, Tom noticed the fresh smell again as he nudged closer to her.

She was a quick learner, easily grasping the material, and the hour sailed by.

As he hoisted his backpack, he cleared his throat and asked again, "I know you have a quiz tomorrow, but do you want to grab a bite at the Bear's Den?"

"Sure. I do have a big day tomorrow, so I can only stay for a bit."

His plan to meet an hour earlier had worked. It was a quick walk up the stairs to the Bear's Den. He fought the urge to take two steps at a time.

The Bear's Den was a popular meeting place, especially in the evening. Most of the Memorial Union had been renovated at one point or another, but the Bear's Den kept a 1950s vibe, with chrome Formica tables and red aluminum chairs. It had the same linoleum as the computer lab, which made the room even louder when filled with students. It was a wide, open area with dozens of large circular tables and smaller square tables lining the walls. Tom preferred the square tables, and he had one favorite on the back wall.

He grabbed a small coffee and Jenny a Diet Coke. They split a bear claw, which was usually a little chewy this time of day, but still good.

Tom pointed to his table near the back. Jenny said hi to a group of girls on the way to the table.

As they sat down, he used the line he'd been practicing for days. "Dr. Wade mentioned you were in the Honors College?"

"Yep. I haven't declared a major yet, but I'm leaning toward English."

"Really. I assumed you were a computer science major. Nobody else usually takes this course."

"Yeah, I figured that out too late to drop it. Thanks again for saving me."

She didn't have a Maine accent.

"Where are you from?" he asked.

"Amherst, a small town in the middle of Vermont, but I've lived all over the world growing up. My dad was a physician in the Foreign Service, so we moved every three to five years, like in the military. Before Vermont, we lived in Washington, D.C., and before that in Colombia. I was actually born in Hong Kong."

She continued, "My mom is a nurse. My parents met in New Hampshire at Dartmouth where my dad was an intern, and she was in nursing school. My mom is from Vermont, close to where we live now. Her Vermont roots are partly why we moved back to Amherst when my dad retired about six years ago."

"I've never been to Vermont. Why did you pick the University of Maine?"

"I want to marry a lobsterman."

"Well, I grew up in Limerock, the lobster capital of the world—I'm not sure that's a good idea..."

Tom stopped as Jenny smiled. He cleared his throat. "Orono is about two hours from the closest lobsterman."

"Yeah, well, I didn't have a map in front of me when I applied." He noticed her left eye twinkled when she smiled. "But I love the outdoors and Maine has lots of it. Maine was a perfect fit, but my parents were a little surprised. My dad always wanted me to go to Yale, his alma mater, and my mom suggested either Dartmouth or Middlebury to be closer to home. It took a while to convince them, but when they learned more about the Honors College, they were on board."

Tom suspected Jenny was well-to-do. Most out-of-state kids were.

After a chewy bite of bear claw, Jenny said, "Dr. Wade mentioned you were also in the Honors College. How do you like it?"

"It's been great. A good advisor is the key. Dr. Wade is mine."

"Yeah, he seems like a good professor. Do you tutor a lot?" she asked.

"As much as I can. I need the money. I'm dual majoring in anthropology and computer science, and I tutor in both. Anthropology is easier."

"No argument here. Why computer science and anthropology? It seems like an odd combination."

"Yeah, I hear that a lot. I'm interested in combining artificial intelligence and archaeology. I'm not sure it will work, but I want to do something innovative. Have you ever heard of Dr. Sarah Parcak and space archaeology?"

"Yeah. I signed up for her GlobalXplorer project, but I haven't done much with it yet."

"I want to do something like that. She generates hundreds of thousands of satellite images of Peru, and I hope to use artificial intelligence to find the good stuff."

Tom continued, "Ideally, a satellite could scan a region of interest and then hand off the images to a neural network.

But the challenge is that every site is unique. The learning for one doesn't necessarily help with another."

He was trying not to sound like a nerd.

"What do you like about computers?" asked Jenny.

She sure asks a lot of questions. Is she really interested?

Someone dropped a book nearby. They both jumped.

"I enjoy programming, getting a computer to follow my commands to do something new or interesting."

"Sounds like you may have control issues," she said. He noticed the twinkle in her left eye again when she smiled.

Tom enjoyed her smile, and she was right, on a certain level.

It was getting late. As they finished their drinks and the bear claw, Tom offered to escort Jenny back to her dorm.

"No thanks. I know the way." As she got up, she simply repeated, "Same time next week?"

"Sounds great. Good luck tomorrow on your quiz."

After Jenny left, Tom spent a moment collecting his thoughts.

"What just happened?" he asked himself, apparently out loud, as a couple of nearby heads turned.



Tuesday, October 23, 2018

The University of Maine

Orono, Maine

The next Tuesday, Jenny texted Tom.

< Sorry Tom. Need to cancel this week. Big project due Friday and group meets Thursday night. >

< Do you want to meet tonight or tomorrow? >

< Sorry I can't 😞 >

Tom rubbed his unintentional stubble. The sad emoji cheered him up a little.



Thursday, November 1, 2018

Computer Lab

The University of Maine

Orono, Maine

For the next week, he checked his phone with trepidation every time he received a text, worried he'd get another message from Jenny canceling another session. On Tuesday, he changed her text tone to the refrain from Don Campbell's "You and Me."

*Lots of love birds just like us and they're all
around as far as I can see...*

Now, at least, he would know if the text was from her.

The text never came.

When Jenny finally arrived at the Computer Lab, Tom dove right in. They had a couple of weeks to review and a mid-term next week, and he hoped they'd still have time for the Bear's Den.

Jenny came prepared, and they were up to date within the hour.

She agreed again to the Bear's Den, this time with no time constraints.

Tom had learned a lot about Jenny from the last session. Tonight, she started the questions. After they settled into their back table, she asked, "Why did you pick Maine?"

"I always planned to attend college, which was my parent's plan as far back as I can remember. I was never sure why they were so insistent. Neither of them attended college.

"My teachers in high school wanted me to look around, but I only applied to Maine. Most of them thought it was a lazy choice, but the University has a great computer science program, anthropology department, and the Honors College. It's also affordable with my tutoring. And a few of my friends from high school were coming here too."

"You said you grew up in Limerock. Where's that?" she asked.

"There's an old expression—Camden by the sea, Limerock by the smell. It's on the coast by Camden."

Jenny smiled. "Is that Maine humor?"

"Yeah, Maine humor."

"Tell me more about Limerock by the smell."

"Well, Limerock doesn't smell anymore. Commercial fishing is pretty much gone. I wasn't kidding when I said it used to be the lobster capital of the world."

He thought Jenny's eyes widened.

"My mom and dad are Maine natives. When I was growing up, my dad did various jobs, but now he sells and installs carpets. He has an office and showroom at the end of the house." Talking was like moving. It relaxed him. "My mom also has a small upholstery business at home."

"Do you have any brothers or sisters?" she asked.

"Nope, only me."

"Me neither—only child."

Tom was taking his time with his coffee, but Jenny had finished her bear claw.

"Do you have a quiz tomorrow in English?" he asked.

"Nope, we have a break this week after the project last Friday, but I should get along. I've a test in another class tomorrow."

After she left, Tom wondered if these meetings were still only tutoring, or possibly something more. They planned to meet again next Thursday. He'd offered to see her in between if she ever needed extra help, but he didn't really expect her to call.

He hoped she wouldn't learn too much too quickly and end the tutoring.

Inca Gold

November 2018

Cartagena, Colombia

Before Omar left Abu Dhabi, he wound down his antiquities business, which required too much time and oversight. Looting, on the other hand, was much more lucrative and less hands on, so he would continue to search for hidden treasures and fabricating provenances.

The Hobby Lobby scandal shook his world, and opened a window into his other businesses, a window he needed closed. Homeland Security traced some of the Hobby Lobby documents and fraudulent provenances back to him. All his endeavors over the years were at risk, which led to his relatively abrupt move to Cartagena, a city of about a million people on the northern coast of Colombia. He found a compound on the water, on the outskirts of the city, that provided him with the security he needed and was large enough to accommodate his staff. Although the compound was not for sale, Omar had convinced the owner to sell. The property was on a peninsula, so he would only have to secure one side.

The main house was a little smaller than his home in Abu Dhabi, but the surrounding grounds were expansive. He looked forward each afternoon to the sea breeze that helped with the oppressive humidity.

Initially, he spent most of his time organizing his personal collection in a room he called the museum. But it would

take more than a collection of Middle Eastern artifacts for him to feel truly at home. He buried himself in his work, rarely leaving the compound.

He always thought it ironic that Hobby Lobby had landed him in trouble and not his arms dealing.

He would continue his arms dealing in the Middle East, but he was looking for a change here as well. His whole life had been in the Middle East, with its inherent turmoil. Now that he had accumulated sufficient wealth, he looked forward to pursuing other interests.

One reason he chose South America was the legend of the lost Inca gold that he had studied years ago at Birzeit. The legend had always intrigued him. He was a voracious reader and almost everything he read about the Incas typically included some reference to the lost gold. The notion of gold just waiting for him to discover was compelling.

It was a fascinating story, but there was not just one story. He understood a tale with this many narratives is often a myth, but he was still captivated. It rekindled the spark he had felt as a young man when he had first entered the antiquities market to search for treasures.

After finally settling into his new home, Omar pulled out the notes he had accumulated over the last few years on the Inca treasure.

- *The Spanish Conquistador, Francisco Pizarro, captured the Inca king Atahualpa in Cajamarca, Peru in November 1532.*
- *Atahualpa offered a ransom of a room full of gold and two smaller rooms of silver.*
- *Pizarro agreed - gold and silver trickled into Cajamarca.*
- *Pizarro became impatient. Worried Atahualpa was planning an attack, with only a portion of the gold delivered, Pizarro executed Atahualpa in July 1533.*

- *The legend holds that the Inca General Rumiñahui was on his way to Cajamarca with the rest of the ransom.*
- *When General Rumiñahui learned of the execution of Atahualpa, he turned his army back into the Llanganatis, a remote mountain chain in Ecuador where he hid the rest of the ransom gold.*
- *Along with gold grains and nuggets, General Rumiñahui transported the gold as plates, tiles, jars, cups, figurines, and other trinkets.*
- *Silver was the same along with silver ingots.*

To fill the ransom room in Cajamarca, the value of the gold today could easily exceed a billion dollars. He was not interested in silver. His singular focus was on the gold.

Omar then pulled out Valverde's Derrotero, directions to the hidden gold dictated by Valverde, a common Spanish soldier. This is the document used by almost all explorers in the last one hundred and fifty years.

The legend says Valverde married an Inca princess and her father, who had helped hide the gold, showed him the location of the treasure. Valverde became wealthy.

Later in life, Valverde returned to Spain. On his deathbed, he dictated the Derrotero for the King of Spain. Omar used the translation found in a book by Richard Spruce, a botanist, who explored the Amazon and Llanganatis around 1860. Spruce uncovered the Derrotero in Banos, a small town in the eastern Andes.

Omar had read the Derrotero many times over the years, but he always focused on the first sentence.

Placed in the town of Pillaro, ask for the farm of Moya, and sleep (the first night) a good distance above it; and ask there for the mountain of Guapa, from whose top, if the day be fine, look to the east, so that thy back be towards the town

of Ambato, and from thence thou shalt perceive the three Cerros Llanganati, in the form of a triangle, on whose declivity there is a lake, made by hand, into which the ancients threw the gold they had prepared for the ransom of the Inca when they heard of his death.

Although the Derrotero continued for two pages, his index finger traced the end of the first sentence—*there is a lake, made by hand...*

He did not necessarily believe in the literal translation of the Derrotero. Too many had carefully followed the guide, only to return empty-handed, or not at all.

Instead, he fixated on the reference of a man-made lake. Virtually all accounts of expeditions following the Derrotero looked for the gold in a cave or mine. No one had seriously searched for an artificial lake or gold underwater because no one could see underwater—until Depth Cam.

Omar first saw Depth Cam a couple of years ago.

Ren Zheng was the CEO of Zheng Enterprises, a technology company headquartered in Hangzhou, China. Zheng was one of Omar's closest business associates and they often shared information with each other that might be mutually beneficial. Zheng was intrigued by a camera developed by a graduate student at Stanford around 2015. The camera, mounted on a plane or drone, could see about ten meters under water by eliminating the surface distortion of the waves. It was called FluidCam and the technology Fluid Lensing. The clarity of the images was remarkable, but the technology was limited to drones or airplanes.

Zheng thought it might have a military application, especially if mounted on a satellite, so he stole the design specifications and the software. Stanford never discovered the theft. Zheng Enterprises re-built the FluidCam in about six months, with enhanced optics, and called it Depth Cam. Shortly thereafter, Depth Cam was on a satellite in low Earth orbit. The

images from space were equally remarkable, but still limited to a depth of ten meters under water.

Its military applications were not apparent, so Zheng put the project aside.

Omar agreed that the military applications were limited, but he had always wondered if the camera system might help him find the Inca gold.

Omar then pulled out a dissertation he had come across over ten years ago from a Yale doctoral graduate student. The thesis, postulating where satellites might lead the field of archaeology, had planted the idea that this technology might help Omar find the lost Inca gold. The dissertation also touched upon the use of artificial intelligence to interpret the imagery from satellites.

Jerome Westhoven, the graduate student, successfully defended his thesis and was now a tenured professor in archaeology at Yale.

On and off over the years, Omar had reviewed the biography of Dr. Westhoven on the Yale website. It had changed little. Dr. Westhoven still listed his interests as pre-Colombian civilizations and technology in archaeology. Under hobbies, he listed expeditions, mentioning one to the Llanganatis.

Dr. Westhoven had become the editor of *Modern Archaeology* about four years ago, a reputable journal. Omar had found an editorial by Dr. Westhoven from a couple of years ago about the potential use of artificial intelligence and deep learning. His editorial focused on the inadequate training data sets, which hampered machine learning, and some potential solutions. He referenced the satellite work by Dr. Sarah Parcak.

Omar was already intimately familiar with the work by Dr. Parcak. She had found evidence of looting, which she called "waffles" in some Iraqi sites. He was impressed she had detected his handiwork from space.

He had read her textbook, *Satellite Remote Sensing for Archaeology*, published in 2009. It was technical, but he understood what she could do with satellite imagery. Omar

imagined the potential of combining artificial intelligence with satellite imagery.

He had also studied artificial intelligence and deep learning. Much of what he read was heavily laden with jargon, but he understood the principles. You train a neural network with a data set. Once it has learned, it could then find similar images or objects, sometimes with better accuracy than a human, and a lot faster.

All the pieces circulated in his head.

Omar had established a routine of walking around his estate after lunch, when the sea breeze was just starting, and the oppressive humidity was yet to come. This is when he would let his mind wander.

It was on one of these walks that he decided he would fund a "virtual" expedition in the Llanganatis, using Depth Cam and artificial intelligence to identify *a lake, made by hand, into which the ancients threw the gold.*

If the virtual expedition found a lake or lakes with possible treasure, the second phase of his plan would be an actual expedition to the Llanganatis, but not the traditional, on-the-ground expedition. He would use a helicopter.

After years of contemplating the Inca gold, the time had come to move forward.

He needed someone like Dr. Westhoven to pull this together. With his reputation in the world of antiquities, however, Omar could not approach him directly. Once again, he needed an intermediary, preferably one already with a connection to Dr. Westhoven. With a little research, he found an antiquities dealer in Bogotá often mentioned in connection with artifacts authenticated by Dr. Westhoven.

The pieces were falling into place.