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## Who (or What) Killed King Tut?

When British archaeologist Howard Carter unsealed the tomb of Tutankhamen in 1922, he brought fame to the twelfth king of Egypt's eighteenth dynasty. King Tut, as we like to call him, enjoys recognition greater than that of any other Nile Valley monarch except perhaps Cleopatra. Carter also found a mystery in that tomb. It may even be a murder mystery—still unsolved, thirty-three hundred years after the young pharaoh's death. Some scientists see evidence that the embalmers had been hasty and careless, handling the body roughly. They also cite signs that workers furnished and decorated the tomb in a clumsy rush, as if somebody was trying to hide something. Then there are X-rays, taken in the 1960s and 1970s, showing hints of what may have been a violent death.

Tutankhamen reigned between 1333 and 1323 BCE, preceding Cleopatra and her Roman contemporaries by thirteen hundred years. To state the obvious, that's a very long time ago.

If it hadn't been for the unspoiled bounty of art and artifacts that Carter found with the young king's mummy, Tut might have remained lost to the ages. That appears to have been the idea. A slightly later pharaoh ordered that the names of Tut, his two immediate predecessors, and his immediate successor be erased from official records. Workers with chisels chipped the names from monuments and buildings, leaving blanks or substituting the hieroglyphs for the tyrant Horemheb, an army general who, for lack of a royal heir, ascended the throne in 1319 BCE. Horemheb backdated his reign by more than thirty years and reinvented himself as successor to Amenhotep III, Tutankhamen's grandfather. It was as if the royals who lived and ruled after the 1353 BCE death of Amenhotep the Magnificent and before Horemheb's takeover had never existed.

Why did Horemheb create this fiction? Why conduct a disinformation campaign, attempting to erase four pharaohs from history? His motive seems to have been rooted in the enigmatic character and the singularly strange reign of Tutankhamen's father, Akhenaton. Portrayed in ancient wall paintings and sculpture as the pharaoh with the elongated features—a jutting chin, a stretched-looking head, spidery fingers and toes—Akhenaton was a rebel who derailed fifteen-hundred-year-old religious values, political traditions, and military priorities. He left it to his survivors—including a bewildered, ten-year-old successor—to clean up the resultant mess.

Tutankhamen was not the boy's original name. He was born *Tutankhaten*, meaning "living image of the Aton." The name reflected Akhenaton's belief in a god of the sun disc, Aton, essentially a new deity that Akhenaton elevated above all the traditional Egyptian gods, replacing them. Tut was probably born in Akhetaton (now Amarna), a new capital city that the king ordered to be built in honor of the new god. The resemblance between the names Akhenaton and Akhetaton was not, of course, coincidental. The king's name meant "useful to Aton," the city's,

“seat of Aton’s power.” Akhenaton had taken the throne as Amenhotep IV and then changed his name, just as he changed so many other things.

Not all Egyptologists agree that Tut was Akhenaton’s son. The prince’s origins—like those of several characters in this story—remain somewhat obscure. Some experts think that he and Smenkhkare, his immediate predecessor as pharaoh, were much younger brothers or half-brothers of Akhenaton, fellow sons of Amenhotep III. Both were also Akhenaton’s sons-in-law, married to two of his daughters by his queen, Nefertiti. Royal practice was for royals to marry royals, sometimes even daughter to father, as a way to concentrate the purity of the bloodline. Smenkhkare and Tutankhamen were probably their wives’ half-brothers, but they may instead have been their wives’ uncles. Both widespread incest taboos and modern genetic science suggest that it’s inadvisable for sisters, brothers, uncles, and nieces to conceive children with one another. Inbreeding narrows a gene pool, so that genetic defects become more likely to express themselves. The fate of Egypt’s eighteenth dynasty may provide a cautionary tale on this subject. Some modern medical examiners of Tut’s remains think that the kid may not have been quite right.

The boys (assuming that both of them were boys) likely were Akhenaton’s but almost certainly were not born of the king’s “great wife,” Nefertiti. The great wife was the queen, but a king often had other, lesser wives. The burial place of Akhetaton shows evidence of a secondary wife, Kiya, who may have died giving birth to little Tut. At least, the timing seems right.

Smenkhkare remains an even more shadowy figure. One rather inventive line of thought says that he was not a brother or an uncle at all, but a woman, perhaps Nefertiti herself in the guise of a man. Whatever else the theory says, it illustrates that when evidence is lacking, imagination tends to take over, even among Egyptologists.

Why did Akhenaton change religions? Nobody knows, but it's reasonable to assume it was both a personal vision and an attempt to break free of the bureaucracy that had built up around his predecessors. A dense hierarchy of priests and scribes ran the government in Thebes. By tradition, the pharaoh himself was a god, the font of earthly authority. But ancient Egypt was a big nation with a rich history. It had been formed more than fifteen hundred years earlier by the union of two even more ancient societies. The theocracy over that time had spawned levels and levels of priestly administrators and their underling scribes. As in any hierarchy, there were politics—complex alliances and enmities of favor and privilege, ins and outs, bribery, and corruption.

It appears that Akhenaton did not like the games his people played. By turning his back on the old gods, including mighty Amon, king of the gods and patron of Thebes, Akhenaton undermined the priestly class.

Unlike Thebes, where temples had shadowy hallways and alcoves, the new capital featured roofless gardens of worship, open to the bright Egyptian sky. The style of royal art changed drastically. In subject matter, portrayals of idyllic domesticity replaced violent scenes of hunts and battles. Instead of being shown slaying foes or capturing slaves, the king is depicted at the dinner table, dandling his infant daughters, kissing his wife, and offering up libations to Aton. Unlike the traditional sun god, Re (or Ra), this new sun god was never depicted in human or animal form. Artists showed Re as a hawk-headed man with a snake—cobra or asp—encircling a sun disc balanced on top of his head. Aton, by contrast, was the disc unadorned, the sun itself.

Stylistically, the traditionally idealized form of the pharaoh was out. Artists, apparently by royal direction, instead showed the king's odd physiognomy—a long chin, narrow eyes, a slender neck somewhere between gracile and gawky, a weak-looking

chest, and a pot belly exposed above a low-slung kilt that hugged wide hips and thick thighs.

If that's what Akhenaton really looked like, he may have had Marfan's syndrome, a disorder of the connective tissue that leads to unusual growth patterns. This genetic condition would account, especially, for the long head, the long chin, the narrow eyes, the pinched shoulders, and the long digits. Marfan's is expressed differently in different people, and the symptoms resemble those of some other disorders, so it is especially difficult to make a diagnosis from paintings or even photographs. Some scholars have suggested, but never proved, that U.S. president Abraham Lincoln's gangly build and unusual looks were evidence of Marfan's.

In the 1990s, Egyptologist Bob Brier talked to New Yorkers with Marfan's syndrome to gain insight into the pharaoh's character. Some of them told him that—especially in their youth—they flaunted the dramatic physical characteristics that made them look and feel so different from everyone else. Brier thinks Akhenaton, a rebellious sort, may have done that, too. Alternatively, he may simply have enjoyed expressionistic exaggerations in art.

As Akhenaton behaved like the head of an ancient flower-child cult, his country suffered a lack of leadership. Back in Thebes, the traditional priesthood struggled with loss of prestige and income. The city began to fall into disrepair. Tax revenues declined as the king neglected governmental oversight. Neighbor states decreased the amount of wealth sent to Egypt in tribute—money sent to keep the mighty superpower from invading. Egypt's ambassadors abroad sent dispatches pleading for military support, which did not come. Ambitious princes in places like Palestine and Assyria began to think that maybe Egypt wasn't so indomitable after all, and with good reason.

Akhenaton neither ventured into battle nor sent his army to enforce regional order. In fact, he declared that he would not

step beyond the boundaries of his new city. The nation was in decline, in danger, and the king kept himself blissfully insulated.

A cheer must have gone up when Akhenaton died in 1336 BCE. His death presented a chance for restoration. Indeed, his successor Smenkhkare began to rehabilitate the cult of Amon. Smenkhkare's reign was short, however. He died young, succeeded by his little brother Tut, about nine or ten at the time. The boy's royal status and that of his progeny was cemented with his marriage to Akhenaton and Nefertiti's third-oldest daughter, Ankhesenpaaten, a few years older than he was.

During his minority, the new king was cared for by a regent, Ay, who occupied the office of prime minister. Despite having been Akhenaton's top priest to Aton, this political veteran was a realist. Bowing to pressure, Ay got to work on restoring the old, Thebes-based government. The young pharaoh's name was changed to Tutankhamen ("living image of Amon") and the teen queen's name became Ankhesenamen ("living through Amon"). The shift must have baffled and frightened the young couple, raised to worship their father's "one true god."

Little is known of Tut's life during his decade-long reign, except that like Smenkhkare before him, he died quite young, probably before he reached age twenty. Yet details about the way he was buried have raised suspicions that something unusual was going on around the time of his death.

For one thing, the tomb isn't right—not what a royal tomb should be. Because the contents are treasures of archaeology, priceless pieces of exquisite ancient art, people in the twenty-first century tend to think of Tut's tomb as an example of regal splendor. Yet that's entirely because it remained undiscovered and untampered with over thousands of years, while grave robbers took everything of value from the more stately tombs around it.

By comparison with other royal burial suites in the Valley of Kings area near Thebes, Tut's tomb is small to the point of

unseemly. Many Egyptologists believe that Ay's larger tomb had originally been intended for Tut and that Tut's tomb had been built for the commoner Ay. Others think that Tut was buried in what was not a real tomb but essentially a storeroom, a place to put artifacts that had been rescued from the graves near Akhetaton, which was becoming a ghost town.

Tombs contained possessions—spears, bows, arrows, bowls, wine jugs, chariots, and more—because ancient Egyptians believed that a person would need them in the next world. Tut's cramped tomb was crammed with items, many quite beautiful, but few of them seemed to have belonged to him in life. Some bore the name of Smenkhkare. Many seemed haphazardly shoved in, scattered as though placed with little care. The tomb opening was so narrow that axles had to be sawed in half so that chariots could be fit through the passage.

Tut's burial itself seems to have been botched. For one thing, the stone lid that covered his mummy doesn't match the rest of his sarcophagus. Instead, it is a damaged piece, apparently scavenged from a different vessel and made of a different-colored stone. It was clumsily patched and painted to look as if it belonged.

The mummy itself is a puzzle, too, although much of the fault for that lies with Carter and his 1920s colleagues. Archaeologists of the time didn't understand the value of a mummy, what they might learn from it. They wanted to get at artifacts. The neckbands, the amulets, and the scarabs wrapped in the body covering interested them more than dried flesh did. Tut's body had been covered with embalming resin and fragrant oils, which had hardened over the many centuries, coating the funerary mask and cementing jewelry so that it could not, without great effort, be removed. Carter tried to soften this rock-hard layer by exposing the mummy to the hot Egyptian sun. When that didn't work, he and his assistants scraped and chipped at the hardened resin with hot knives. Still dissatisfied with their

progress, they resorted to cutting off the arms and the legs, severing the head, and even slicing the torso in two. Such mistreatment caused rapid deterioration of the mummy, especially what was left of the soft tissues.

Some experts think, however, that the body was damaged much earlier, as it was being prepared for burial. For example, the king's breastbone is missing, and it appears that it may have been so before embalmers wrapped the body. Egyptian embalmers customarily removed the brain and the major abdominal organs so that the corpse could be dried with natron salts (a naturally occurring combination of sodium chloride, sodium carbonate, and sodium bicarbonate, harvested from dry lakebeds). They did not, however, mess with the heart. Assumed to be the seat of thinking, the heart was something the deceased would need in the next world. There was not a custom of cracking the chest.

The Egyptians didn't know what the brain was for, but they knew that it was too moist to preserve well, so they—wait, perhaps this is a good place to warn the squeamish. If you don't want to know what they did with the brain, skip the next paragraph. Come to think of it, skip the next two paragraphs.

For those of you who don't mind this sort of thing, the Egyptian embalmers needed to get the soggy old brain out of the skull without spoiling the deceased's good looks. Their method was to take out the gray matter through the nose, but very few people have brains small enough to fit through their noses. The embalmers got around this difficulty by liquefying the gray matter. They stuck a long, thin tool up one nostril, breaking through the sinus bone and into the cranial cavity. Then they whipped their tool around like a whisk until the brain was the consistency of raw egg. Turning the corpse over onto its stomach, the embalmers then drained the liquid out the nose. Next, they turned the body over again and poured in hot resin to cauterize any remaining tissue and coat the inside of the skull with this preservative.

Other organs came out through a neat slit cut into the left side of the abdomen. The embalmer reached in, felt around blindly with one hand, and cut out the organs one by one with a knife held in the other hand. In Tut's case, the incision appears ragged and too long—sloppy work, say latter-day critics.

None of this would necessarily have raised suspicions of foul play if it were not for X-ray images of the mummy, taken in 1968 by scientists from the University of Liverpool, and another set shot ten years later by a University of Michigan research team. The images revealed what appears to be a bone chip inside the head. Was this caused by pre-death trauma to the skull? It took years, but scientists finally agreed that it was not. If the bone chip had been there at the time of embalming, it would have been glued to the inside of the skull by the resin. Buried in hardened resin, which appears opaque on X-rays, the chip would not have shown up so clearly on the images. Still, the subject of violent death had been raised.

The head also seemed to have suffered what might have been a blow or even a puncture at the lower back left, just behind the ear. Some radiologists saw a shadow that they thought indicated a subdural hematoma, an injury caused by trauma such as a sharp blow to the head or in some cases by a tumor or a burst aneurysm. Internal bleeding can lead to a calcium deposit that would show up on an X-ray, even thousands of years later, as a thickening of the bone. Some radiologists thought, however, that this was an illusion caused by the way the resin had settled before it hardened. Tut also appeared to have suffered an abrasion to one cheek and a broken leg—although examiners weren't sure whether the bone was broken before or after he died.

Another suspicious oddity occurs in a bit of wall art within the tomb. It shows the priest performing the traditional opening of the mouth ceremony—a symbolic preparation for Tut's next life. Writing on the wall clearly identifies the priest as Ay, the prime minister. Yet he is wearing a pharaoh's headdress. In fact,

the aged Ay succeeded Tut as pharaoh. But the new king traditionally took the crown after the old one was laid to rest, not before. What was going on?

In 2002 Michael R. King and Gregory R. Cooper, veteran police investigators from Utah, tried to apply modern crime detection procedures to Tut's death. With the help of archaeological, historical, and medical experts, they developed a case that pointed to Ay as a possible murderer. At nineteen, Tut was well into adulthood by his society's standards. Was he ruling on his own, making decisions that prime minister Ay did not approve of? Had Tut shown signs of bucking the system, as his father had done? Could Ay have committed murder, or ordered murder, to keep history from repeating itself?

Ay certainly had access to the victim, and as the government's most powerful minister, he had means to cover up his crime. He may have used his authority to rush the funeral and his own coronation so that the transfer of power would be complete before the country's top general, Horemheb, returned from a military campaign.

Tut left no heirs. His wife, Ankhesenamen, had miscarried twice, a detail known because the young couple had taken the unusual step of mummifying the stillborns, both girls and both exhibiting signs of spine deformities. One of them seems to have had spina bifida, a congenital rift of the backbone.

Because Ay was not royal by birth, he needed a way to legitimize his rule. Most experts believe that he married the widowed young queen for this purpose. Antiquarians cite the existence of two ceramic rings dated to the period and linking the names of Ay and Ankhesenamen—probably two surviving examples of party favors from a wedding feast. There is some evidence that Ay had other marriage ties to the royals. Amenhotep III had taken the unusual step of marrying a commoner, and Ay may have been the brother of that queen, Tiy. Historian Paul Doherty thinks it likely that Ay was also the father of Nefertiti.

If so, then Ankhesenamen may have been his granddaughter before she became his wife.

Even so, she was a queen by birth and he, her social inferior. The most intriguing bit of evidence that something was rotten in Thebes is a document discovered far to the north, in Turkey. Among the records of the ancient Hittite civilization, there is an account of letters written by an Egyptian queen to the Hittite king Suppiluliuma. The letters stated that her husband was dead, that she had no son, that she was afraid, and that she refused to take her servant as husband. She pleaded with the Hittite king to send one of his sons to her, promising to marry the prince and make him pharaoh. That queen was almost certainly Ankhesenamen.

The Hittites and the Egyptians were enemies, so Suppiluliuma cautiously investigated before sending a son to Egypt. He must have confirmed that the invitation was genuine. Yet someone intercepted that young Hittite and his entourage and took care to kill him before he reached Egypt. Did Ay send a patrol to murder the foreign prince? Was Ay the “servant” whom the queen refused to marry? Michael King, Gregory Cooper, Brier, and other investigators think it likely. They also raise the possibility that Ay and General Horemheb were co-conspirators, and that Horemheb did the killing.

Ay was nearly sixty, quite old by standards of the time, when he became pharaoh. He ruled less than four years and then died. At that point, Horemheb suppressed Ay’s chosen successor and took the throne for himself. How did Horemheb claim royal legitimacy? Perhaps he felt that after the precedent of Ay, the first commoner-pharaoh, he didn’t need legitimacy, that his control of the army sufficed. Or perhaps Ankhesenamen wrote to the Hittite king a few years later than is commonly thought. Perhaps she was afraid of Horemheb, not of Ay. Perhaps it was the general who was forcing her to marry him. Maybe her alliance with Grandpa Ay had not been matrimonial but purely political.

At any rate, Horemheb was the pharaoh who erased the names of Akhenaton, Smenkhkare, Tutankhamen, and Ay from Egyptian history, backdating his own reign. He also abolished the cult of Aton. Obviously, he must have harbored antipathy toward Tut, if only for the boy's origins. Could he have been the murderer?

What if Tutankhamen wasn't killed? Doherty engaged a radiologist to take a fresh look at the old X-rays of the mummy. His expert interpreted the condition of the spine as evidence of fused vertebra—perhaps from a congenital defect passed along to the king's stillborn daughters. The historian notes that Tut is often depicted in surviving art as either leaning on a walking stick or sitting. In one wall painting, he shoots his bow from a seated position while Queen Ankhesenamen, crouched at his feet, passes him another arrow. There were more than forty walking sticks among the artifacts in his tomb.

Doherty theorizes that Tutankhamen had been disabled from birth. Other paintings that show him driving a chariot and making war may have been part of a campaign to make him appear far healthier than he was. If the boy inherited Marfan's syndrome from his father, the disorder may have expressed itself in spinal problems and also in a deformed sternum that jutted out, a condition called "pigeon chest." Such a breastbone, ill-formed and fragile, might have easily been crushed during the embalming process. Doherty notes that another mummy, probably that of Smenkhkare because of its close physical resemblance to Tut's, also is missing the breastbone. Perhaps they shared an affliction. And perhaps that affliction, which can increase the likelihood of an aneurism, killed Tutankhamen.

In 2005, a team of Egyptian scientists led by Zahi Hawass, the nation's most distinguished authority on antiquities, made new images of King Tut's mummy, this time using CT scan technology. Their interpretation of the pictures is that the king was neither a murder victim nor disabled. Although he had an

elongated skull—like his father’s in the paintings—the trait was not outside the range of normal head shape, said the scientists. An unnatural bend in the spine, they ruled, probably happened after death, during embalming.

Hawass announced that most members of the team, although not all of them, thought the king had died of gangrene, the result of a compound fracture of his leg. They speculate that the infected wound had killed him rather quickly. They saw no evidence of a blow to the head. It should be noted that CT scans, like X-rays, require interpretation. Even using twenty-first-century technology, radiologists can disagree about the nature or the origin of a shadowy mass within a brain or a bone. Other experts will examine the seventeen hundred images that the Egyptian researchers shot, and some of them may disagree with the Hawass team’s conclusion.

Until then, it seems most reasonable to accept the recent finding—that King Tut’s death was an accident. Maybe Tutankhamen was a reckless driver who crashed his chariot. Then again, maybe an assassin sabotaged the chariot or deliberately frightened his horses.

### **To investigate further:**

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