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MAGIC PICTURES

My pilgrimage to the Shrine of the Stone Lions was on a hot July day after a three hour hike on a poorly marked trail annoyed by the occasional rattlesnake and the anxiety about the adequacy of my water supply. Climbing up and down ravines, across open plateaus, with nothing but the extraordinary, stark beauty of the New Mexico high country forced my mind to empty itself except for the basics of the hike – including marking my trail for the three hour return journey. As I sat near the shrine amid the ruins of the Yapashi Pueblo, the reality of the day slipped away. The pueblo has been abandoned for nearly a thousand years and has never been excavated. I could barely walk without stepping on pottery shards or prickly pear cacti. The stone effigies of the lions are slightly larger than life size and have been revered for over a thousand years up through today but their origin is unknown. The area and the shrine were still marked with recent sacrifices of corn pollen, flowers, and figures shaped from corn husks. Gazing for miles alongside the shrine and pueblo, I recalled all I had read about the ancient people of the area – those we have erroneously called the Anasazi and those that followed. The hot day was completely quiet – no birds or mice scrambling about, just me. That moment of stillness that can take a pilgrim to another place had come.

I have great respect for the ancient people of that area and the rest of the continent. They were highly intelligent with the ability to read the stars and predict seasons. They had the knowledge to grow crops as well as store the harvest over the winter. Their arrowheads and spear points gave them hunting abilities to add protein to the diet. Their family culture was strong and organized as was their sense of where they fit into the universe – what we call religion. Although fighting between other groups was not unknown, it would appear that these conflicts were more like raiding parties than total war that had developed in the more civilized areas of Europe and Asia. The drawings that they left on cave walls and cliff faces showed a remarkable ability to capture not only the image of an animal but the spirit of the animal as well.

These early pueblo people built impressive cliff-side homes and pueblos all though the area that we now call Arizona and New Mexico. People had occupied this area for thousands of years but this early pueblo culture grew and thrived from about 800CE until about 1300 CE. This culture collapsed and was absorbed into other tribes such as the Hopi, Zuni, Taos, and Navajo by 1500 CE.

With these images filling my consciousness, I had a sudden revelation that caused me to embark on a course of study that has filled a book shelf in my office and occupied several additional trips. On this hot day, immersed in the ancient culture physically, mentally, and perhaps spiritually, several time-lines occurred to me. By the time this early pueblo culture thrived and disappeared, people were building cathedrals in Europe and fortresses in Asia. The Bible had been written and re-written for hundreds of years. The writings of Confucius had not

only appeared well before this culture started but had spawned a major philosophical base for millions of people. The culture of the tribes I had been visiting in my reverie was missing something. A void appeared in their capabilities that had never occurred to me before this moment. I stood up and without fully realizing it said out loud "Where's the written language?"

No voices answered my question and the Lions just sat there with their blank, enigmatic stare. From my limited knowledge at that time and now more complete understanding, I realized that these intelligent and creative people and their descendents never developed a written language. From the Aroostook on the east coast to the Yuki on the west coast, no tribe north of Meso-America ever developed a written language before the European invasion. There were about 400 tribes in this area by the start of the 17th century invasion with a total population estimated between 15 and 20 million people, and none ever felt the need for putting pen to paper or charcoal to birch bark. Why not and why does this make a difference? I barely remember my hike back from the shrine but I did become motivated to explore this fundamental question. Was this inspiration or a simple question rattling around a head full of loose wires? You can decide for yourself since I still don't know, but I do know that my amateur research into the current literature and discussions with a few archaeologists has not provided a satisfactory answer –at least to me. However, you will be the first to hear the theory that I have developed and possible implications of that theory. Call it the Kremzar Linguistic Unified Theory of Society or KLUTS.

First of all, why does it matter? As we all now know, the Europeans flooding this continent – Spanish in the south and southwest and the English and French in the east, were able to knock off the tribes that got in their way one at a time. There were some efforts late in the game by the tribes to join together but too late with too few. Imagine that the tribes had developed into nations with written languages likely grouped around major language families. This would have given these millions of people a communication system that could have sped their technical development but, most importantly, could have helped them understand the risk from the sudden waves of invasion and immigration. When the Apalachee tribe first encountered the Spanish military landing in Florida, it would have been helpful if they could have sent messages to the other tribes and nations alerting them to the new danger of these armed men with war dogs and new weapons. Those early Europeans then could have been met with serious resistance on the beaches up and down the coast where arrows and spears would be effective against landing parties. Also, when disease came with these invaders, a warning might have created enough concern to quarantine those who were permitted to land and prevent the widespread epidemics of new diseases. These "what ifs" are certainly based on wild conjecture but the point is that the absence of a written language meant that these people with hundreds of dialects were unable to do much other than slow and annoy the expansion of Europeans into this continent. Their successes were notable but always in a local, limited way – Little Big Horn comes to mind. That was a very successful battle for the Lakota and Northern Cheyenne but insignificant in the western expansion of the new immigrants.

The reason I emphasize the lack of written language before the European immigration is that most of these cultures were too badly damaged by ravages of disease, defeat, and deception

after contact to continue to grow for more than a hundred years. The real culprits were the diseases brought along with immigrants that were new and deadly to the tribes. The pre-invasion population of 15-20 million shrunk to less than 1 million by the end of the 19th century. Entire tribes disappeared with scattered remnants joining together only to be herded by the new U.S. government into strange areas with unpromising land sometimes even lacking water supplies. These people were in stark survival mode and the possibility of developing anything, much less a written language, was impossible. For those who remember seeing a hymn or two in your church hymnals written in Navajo, these were mostly written by missionaries forcing the linguistic complexities of that language into the constraints of the Roman alphabet. While better than ignoring the language, this is not a true written language of the Navajo but rather an interpretation as heard by our ears.

When I ask people of the present day tribes about the question of written language, I try to be very circumspect because, on the surface, it sounds as if the question assumes a backward, primitive nature of their close relatives. This careful dialog has been successful most of the time and the people I have spoken to, largely in the Southwest, have been proud of their language and worried about its long term survival. Their answer about the lack of a written language is almost always the same: "Our people have always treasured an oral tradition." While I accept this as obviously true, it does occur to me that any people without a written language including my ancestors would treasure an oral tradition. Sitting around a fire pit telling stories of past heroes and families seems like a very human thing to do but the advent of written histories has changed that tradition for all who have the written word. However, one big advantage of a language that is only spoken is that it has a limited vocabulary. Nothing expands a vocabulary like writing and defining a word. This does mean that languages that are only spoken seem more like poetry. These simple languages use natural and observable objects to help describe everyday items including colors. For example, the Cherokee word for yellow, "Zi," is also the word for brown. Where we would say an object is simply 'yellow,' they might say it is "Zi, like the flowers that turn their faces to the sun in the summer," - a lovely and poetic way to describe the world – but not efficient. Of course, modern language has added complexities even to colors with words such as mauve and taupe that do not seem to describe any specific color except to the females of the species.

The people of the tribes became aware of writing as they had more and more contact with the Europeans. They were intrigued and puzzled by the scribbles made by those they met. Is it any wonder that treaties were signed that were laughably one sided in favor of the immigrants since those from the tribes had no idea what they were signing or even what it meant to have a document at all? To illustrate the divide between the Europeans and the tribes, there is an example from the Lewis and Clark expedition. When Lewis and Clark were working their way west, one of their encounters involved negotiations with the Shoshone for horses and food. Even as late as 1805, Lewis and Clark were the first Europeans the Shoshone had seen. The two explorers gave each other notes as the negotiations progressed and wrote comments in their logs. The chief had one of his braves sidle over and look at what was being exchanged. Noting that one would write and the other would seem to understand, the brave returned and said that they have "magic pictures" that let them read each other's thoughts. Actually, I could

not think of a better term for written language than this unknown Shoshone description and the awe that it inspired - magic pictures indeed.

A written language was developed well after European exposure about 1820 by a Cherokee named Sequoyah living in the state of Georgia. With great creativity, he created an alphabet of 85 characters representing the syllables of his language. This written form bares some similarities to the Roman and other alphabets but reflects a brilliant, creative mind. However, this was too late for the Cherokee to do anything but try to save the language itself. Today, Sequoyah's written language is still in use in the Cherokee areas of Oklahoma and Arkansas but with ever decreasing number of readers and speakers.

If we are going to understand why a written language did not develop in a culture, we need to understand why written languages were developed in other areas. Let's start by learning something about our species, Homo sapiens. Our ancestors came out of Africa about the year 50,000 BCE. Within 10,000 years, they had spread to the Europe and Asia continents including Australia. Within another 15,000 years, Homo sapiens had replaced virtually all of the proto-humans, mostly Neanderthals, in those areas. The speculation about the disappearance of the proto-humans centers on their likely inability to adapt to the changing environment and the aggressive nature of their new neighbors. Homo sapiens were built to be swifter of foot and had developed more advanced weapons specifically the atlatl or spear thrower. There is some conjecture based on skull and throat shape that Homo sapiens had verbal skills that exceeded those of the Neanderthals thereby giving our ancestors an important edge in group hunting or fighting. It is also possible that the invaders from Africa brought unique diseases with them that overwhelmed the germ defenses of the proto-humans. Although most believe that these slow witted Neanderthals died out completely, my research does indicate that there may be pockets surviving and migrating to certain cities such as Washington, DC. In any case, the remarkable fact is that our species has grown and spread to all corners of the earth and the near space around it. This small beginning has now expanded to over 6 billion people – and we laugh at the copulating urges of rabbits!

Homo sapiens were good at farming and domesticating animals as well as hunting and fishing. They discovered native grasses that could be cultivated to provide grains – wheat in the Fertile Crescent and Europe and rice in Asia. Horses provided motive power and various bovine species provided both the ability to carry burdens but also provide protein through their slaughter. Small villages sprung up around water sources but for, thousands of years, these were still semi-nomadic peoples moving after game or to avoid their neighbors.

What we know of the origin of written languages is that Sumerian and Egyptian writing began about five thousand years ago at the threshold of the European and Asian Bronze Age. The Egyptians systemized this writing into texts about 2600 BCE. From that beginning, writing in Asia developed the logo-syllabic characters representing words or thoughts. In Europe, the characters morphed into letters that could be used to spell out any word but required a line of words of make a meaningful thought. The Greeks established one of the most widely used

early alphabets that was further refined and spread by the Romans into the form that the Western world recognizes today.

This too brief review of the start of the written form could be the material for several papers by itself. However, what we are interested in here is not so much the form of the written word but why it developed. If you picture our relatives in some valley in southern Europe 10,000 years ago, you would be correct to image a group of perhaps 20 to 30 people living in shelters made from mid-sized tree trunks or limbs embedded in the ground and arched to form a roof. They would be in two or three family units clustered near a stream or a lake and there might have been small garden plots nearby. They would have limited contact with other similar groups and would probably be a bit cautious around strangers since the competition for food or wives would be constant concern. Their tools or weapons would be stone, bone, or shell and much time was required for each unit to find the material and make these tools. It is likely that this camp would be abandoned after a few years when the hunting became harder or the disposal of waste became an environmental problem. I see nothing in this image that would drive a person to suddenly realize that the works of Shakespeare would be valuable additions to the family or would have encouraged people to develop a written record of their lives.

However, something dramatic happened in human history that first showed up about 8,000 years ago and led directly to the Bronze Age and the development of written language. (For those making notes, this is a key teaching point and will likely be on the exam.) Around this time, a gene mutation became more common that permitted people to stay in one location and have a renewable source of protein always at hand. This stability led to wider use of planted food sources that could enrich the diet and supplement hunting and fishing. Over just a few thousand years, this more stabilized family group then grew to include others and the agrarian revolution was at hand. The larger communities developed trading patterns of goods and services including trading between other communities. In the period from 10,000 BCE to the start of the current era, it is estimated that the world population increased over 100 times with some estimates as high as 190 times. When one person or group discovered bronze in the fire pit, that information could be shared to larger groups with a speed unknown before these early cities developed.

This change began when enough people had inherited a modified gene to radically change their chance of survival. By design, all mammals have the enzyme lactase at birth that enables a baby to digest milk. This is true of elephants, mice, and humans. However, it is a real survival burden to have a baby depend on mother's milk for nourishment past the time the infant can be ambulatory and feed itself. A mom cannot be burdened to keep breast feeding a baby any longer than she has to or she will fail herself. Therefore, the bodies of every mammal stop producing lactase at a pre-programmed point in development so that the infant is forced to give up mother's milk and find a nearby McDonald's for sustenance. The change for Homo sapiens was a gene modification that let lactase be produced into adulthood so that milk could be a continued source of nutrients. Now, the cows and goats that had been domesticated could be a major source of food without being slaughtered. Children from these families could be fed milk through adolescence and grow stronger and healthier increasing their opportunity to pass this

gene along to others. Adults could also benefit from this flexible protein source that could be maintained without roaming for game. For those today who are lactose intolerant, be comforted that you do not have a defective gene – you have the original.

No one knows how this gene mutation occurred except that various changes in DNA are occurring every day in the human population. Some of these are not successful changes while others may become notable in the species over long periods of time. One interesting theory is that those poor Neanderthals may have contributed this interesting gene to the pool before they went into the great anthropology history book. Although the Neanderthals would probably not have been desirable breeding stock for the early Homo sapiens, we do know that our species has shown a willingness to copulate with a very diverse list of items or beings. I understand that there are internet web sites that can verify this behavior even today. With the scattered nature of our species at the time, it could have taken thousands of years for this mutation to show up in a group large enough to become noticed and attract mates, and then spread rapidly. After all, life is really a breeding experiment where those in the experience do not have the perspective to see the trends.

Once the communities started to grow into stable groups, two phenomenons started that led directly to written language. One was the formation of governments to help keep the peace and bring some order out of chaos. You have to wonder how we came to the point today where governments are the chaos but that is another paper. Any government is going to have to require funds from the populace to pay for the services rendered by that civil body and that is going to lead to some permanent accounting of who owes what. Also, early governments were led by individual rulers or families and they liked to keep a record of their accomplishments in governance, battle, or relations with higher beings. The Egyptian hieroglyphics were primarily created to establish a record of the ruling families and their triumphs rather than a communication form for day to day living.

The other phenomena is the advent of trading. Now that people were sharing the same general space, it became obvious that I could sell my pots for your cheese or your goat for my extra land. This led to some form of record keeping and, of course, the advent of lawyers to argue those records. If the rulers were the official keepers of a language, the traders were the broadcast media. Their record keeping of trades and who owed what to whom exposed people to the idea of writing in their daily lives. Also, they opened the concept of translation from one language to another – first from those without writing and then between those with written forms. With the establishment of large communities in the Bronze Age, these traders formed a vital link between cities for economic growth, culture, technology, and language.

The Bronze Age marked a real explosion of human enterprise and population growth that coincided with the development of written languages. We will never know the definitive answer to the chicken and egg question here but it is clear to me that it all started with the ability of people to move into larger communities with stable food sources largely led by that simple gene modification for lactase production. There were certainly drawbacks to this major change – as there are with almost every major cultural change. The domestication of animals brought

humans into contact with animal borne diseases that caused epidemics and upset the rate of development. However, there was time for anti-bodies to form and be passed from generation to generation so that these diseases, although still deadly to some individuals, were no longer an impediment to population growth. Once established, the written word became so commonplace during the Iron Age that few would have been totally illiterate and some could read and speak more than one language. Full dissemination of written material would have to wait to the middle of the 15th century for Johannes Gutenberg to develop movable metal type. Of course, several papers could be written about that transition from Gutenberg to typewriters to word processors to smart phones but our point today is to remember how it all started and lead us back to our basic question.

This continent was discovered and invaded by people from Asia about 20,000 to 25,000 years ago during the last ice age. With so much water tied up in ice sheets and glaciers, the Bering Strait between present day Alaska and Russia was a wide open bridge that permitted the transit of people into this unexplored land. Most of this immigration occurred about 12,000 years ago when the ice had cleared enough to open land access deep into the continent and stopped 8,000 years ago when the current warming cycle melted enough ice that the Bering Strait became open water. Also, when the ice sheet extended from Asia to the west coast of this continent, it is likely that a number of people came in by boat following fish and seals along the edge of the ice sheet. We lack archeological records of many of their early settlements along the coast, since ocean levels have risen over 400 feet since those first explorers came ashore. Once here, these peoples spread widely across the North and South American continents in a mirror of the spread of humans through the rest of the world except thousands of years later. It would appear that these were classic hunter-gatherers who followed herds of large animals and gathered fruit and nuts wherever they could be found. Written language had not developed in the rest of the world when they emigrated so the warming cycle isolated these early people from their roots in Asia and they came with similar stone-age tools as their homeland.

The theories about the lack of written language center around the absence of the growth of large communities as happened in the rest of the world during what we call the Bronze Age. Simply stated, as long as the chief has to work like everyone else, written language will not develop. This is very good logic since a chief of a small group has to hunt and secure food and would not have a need to tax anyone. A non-working chief, however, becomes what we would now call government and would need to be supported by his or her subjects requiring record keeping of various sorts – just as occurred in other continents. Certainly, size of a community seems to be a direct path to written language but the “non-working chief” theory is not adequate by itself. We need to know why large communities did not develop.

Some factors that prevented the kind of growth seen in the rest of world during the Bronze Age were persuasive to me at first. This continent lacked any form of beast of burden or domesticatable mammals when the hunter-gathers arrived. There was nothing that looked like cows, sheep, or horses – all of these arrived with the European immigrants. Bison and deer were plentiful but certainly not domesticatable even today. The only animals that were routinely domesticated were dogs and turkeys. This meant that no human moved on this continent faster

than they could run or paddle until the Europeans arrived. Two implications of this situation are that groups rarely met each other since travel of a small community would likely be relatively short distances and any possessions would be moved by human power – either on their backs or dragged behind them - limiting trading between groups. The lactase cessation gene did not mutate as it did in Europe and, even if it had, the only source of milk would have been mother's milk. Those who tried to milk a bison were not likely to expand the gene pool. The people of the present day tribes are still among those in the world who are most likely to be lactose intolerant beyond childhood.

The tribes did not gain wide access to horses until the Pueblo Revolt in 1680. The Spanish Armies that first explored this continent used horses extensively but only brought geldings both for easier control but also to avoid providing local opposition any breeding stock. However, by the middle of the 17th century, the Spanish brought farmers and ranchers with breeding stock into what is now Arizona and New Mexico. In 1680, most of the pueblos in the area organized a revolt in objection to the killing of their medicine men by the Spanish priests. They chased most of the settlers back to forts and seized the ranches and as many horses as possible. This led to widespread use of horses across the southwest and the plains by many tribes but, too late to stop the flood of European immigration.

The other known deficiency on this continent was the absence of a variety of grasses that could provide good nutrients in their seeds. There was no native wheat or rice that could lead to an early agrarian revolution and help develop stable communities. Corn had been cultivated in Meso-America for thousands of years and reached the southwest of North America during the first millennium with widespread cultivation by the middle of the 13th century. A variety of beans, squash, and pumpkins were available and were widely used to help the diet but the main source of protein remained wild animals and fish. These crops did lead to more stable communities but still limited by the need for hunting and fishing.

These two factors, lack of domesticated animals, and inadequate diversity of food plants certainly seemed like adequate reasons to explain the absence of large communities. However, two cultural anomalies popped up in my thinking even on that hot day with the Stone Lions. The most well known are the major communities built on the very land I was exploring in New Mexico and Arizona. Large pueblo communities had been constructed on the side of cliffs and the tops of mesas and were occupied up until 1300 CE with no written language. However, I am going to focus on a different and even more dramatic example. There was a much larger community that was first settled about the year 700 CE and flourished from 1000 to 1200 before finally dispersing by the late 1300's. Located less than 10 miles east of the Mississippi River and present day St. Louis, the ancient city of Cahokia defies definition by many standards and has not received the attention it deserves as a national historic site. This remarkable community was larger than London in the year 1250 and the largest city in North America until European based cities appeared on the East Coast. The key architectural features were over 200 earthen pyramids with a five square mile central city containing half the structures. The largest pyramid, now called Monk's Mound, is 100 feet high, covers 14 acres, and contains 22 million cubic feet of earth with a central plaza covering an area equal to 35 football fields. Most

of the pyramids are flat topped for ceremonial use and several have ridge tops and were burial mounds. The site includes several astrological sites consisting of tree trunks embedded in the ground forming large circles that helped mark the seasonal shift of the sun and moon. The plazas were surrounded by thousands of thatched roofed dwellings for housing, religious ceremonies, and city officials. The amount of energy committed to build this city by these people that we now call the Mississippians is staggering. The engineering is impressive with borrow pits being designed for water catchments, layers of different soil and rock layed down to stabilize the pyramids, as well as precise layout of the plazas along North-South and East-West coordinates. The burial mounds were also precisely designed to align with the summer and winter solstices. The Mississippians established communities up and down the Mississippi River and traded as far south as the Gulf of Mexico.

The city housed about 10,000 people in the central area with another 15,000 in the surrounding countryside. As in some other cultures, the rulers appeared to be both civil governors as well as divine beings or at least connected to divine beings. The burial mounds include elaborately dressed bodies with tributes indicating the kind of grave given to a ruler. Also, the burials included a number of human sacrifices – mostly young women from the outlying areas. The people in the center city lived quite well with the appearance of access to game, fish, as well as corn, squash, and beans. The farming folks in the outlying areas had tougher lives and seemed to consist on an inadequate diet of corn and very small animals. The obvious conclusion is that the central ruler and his immediate neighbors exacted a toll on the farmers that had been drawn to this city. Not only did the farmers provide corn and other items to the city but, on occasion, their daughters were elected to join the ruler in death.

As a kid, I used to play on the mounds, as they are called, during school outings and family picnics. The game was to climb the steep sides of Monk's Mound and see how fast you could run down before tumbling the rest of the way. Except for the occasional broken collar bone, I remember these outings as great fun but with a sense of awe about the place. However, now that we look at the question about written language, Cahokia is a stumbling block to several theories. They certainly had chiefs who did not work as well as priests and hangers-on. They did not have horses, cows, or sheep, but they certainly were a major metropolitan area with far flung trading routes. This was an elaborate, technically advanced society with the ability to apply their resources to major projects. Why no written language?

There is a tantalizing clue that may help answer the question. Near the largest pyramid a broken sandstone tablet was discovered that is divided into four sections, each containing an elaborate carving of a head with decoration. For me, the appearance of this carving looks very much like early Mayan or Egyptian glyphs and could have been the start of someone trying to record events - the forerunner of a written language. Perhaps more excavations will reveal more items like this or even a Literary Club paper, but, for now, it appears to me that this society had the capability and could have been close to developing a written language. They did not proceed far enough because their system destroyed itself before it could progress to the next step.

Based on archeological studies, it appears that people simply abandoned Cahokia and the vicinity after a run of about 300 years. The farmers were likely to have left first. Their diet of mostly corn was not sufficient for good health and the demands from the central government finally became too much. Lacking any divine signs following human and other sacrifices, being part of Cahokia was no fun anymore and people simply left before the tax man got them. The rulers and their central government became more and more dependent on the 'show' of ceremony with increases in demand for food from fewer and fewer providers. Game would have become scarce as hunters exhausted local populations of deer and other protein sources. The river was certainly replenishable but, unlike oceans, rivers do not provide migrating schools of fish, and even the mighty Mississippi could not feed that many people forever. After three hundred years of gathering firewood, it is unlikely that there were many sources of wood remaining nearby for cooking fires or for further construction of housing. This denuding of the forests around Cahokia would have left the city without the fuel for basic survival or the material to build or repair their dwellings. Simply put, the city exhausted its resources – both human and environmental - and imploded.

So what about the Kremzar Linguistic Unified Theory of Societies? To put it as briefly as possible, the intelligent people who preceded the Europeans to this continent lacked the available resources to build the large communities required to set the stage for written language. When a group did build a remarkable city, they exhausted the natural resources around them and alienated their citizens to the point that they could not maintain the critical mass required to record their own history.

As always, there is a moral or at least a closing question to this story. Does our own nation bear any resemblance to this history? How do we stand on resources and how overbearing is our government? Was the insight given to me at the Shrine of the Stone Lions a message about the dangers to our society or the effects of the heat? You get to decide for yourself but the magic pictures of today are appearing more rapidly and in ever changing form. Those who cannot read them will be studied by archeologists in the future.