

# Mr. Einstein Goes to Uruk

A Love Story

There and Back Again

How I Learned to Stop Worrying and Love the Bomb

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The world of the ancient Mesopotamians was oriented along the Tigris and Euphrates. To the east lay the Zagros Mountains, the highlands of Iran, and the Persian Gulf. By association with the sunrise, these regions, or the far east, represented birth and rebirth. In fact, the creation of the universe was believed to have taken place at the eastern horizon, called the Dukug, the Sacred Mound.<sup>1</sup> These regions were far from the cultural hub of Mesopotamia and were seen as backwards. They were reminiscent of the times soon after the creation, of an idealized, pre-civilized state. These associations with

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<sup>1</sup>Christopher Woods, "At the Edge of the World: Cosmological Conceptions of the Eastern Horizon in Mesopotamia", *Journal of Ancient Near Eastern Religions* 9:2 (2009): 203

the past are related to a loose correlation in the Mesopotamian literature of spatial and temporal distance. At the root of this correlation was the long time it took for information to travel from place to place. The finite speed of information has also been useful to describe the world in modern times: it is one of the fundamental tenets of Einstein's theory of special relativity.

The limitations of information are seen elsewhere in Mesopotamian literature. Consider that the known world can be thought of as a geographical region that has perfect overlap with the body of human knowledge: if something is known, it is in the known world, and vice versa. The far east was at the edge of the Mesopotamian known world, both in an informational sense and in a purely geographic one. Since so little was known about the far east, these regions were unbounded by the laws of the observable world, and they were home to various supernatural beings and impossible phenomena. Lugalbanda and Gilgamesh both undergo supernatural transformations in the far east because of this characteristic as well as its association with the sunrise. The reception of knowledge and its revolutionary nature is a key part of these transformative journeys. Because of this, they share some structural similarities with the development of revolutionary ideas in science. In these two ways, the Mesopotamian concept of the far east was characterized by the contemporary limitations of information; these same limitations still shape how our world is viewed today.

In the Mesopotamian tradition, going away from Mesopotamia was anal-

ogous to going back in time.<sup>2</sup> This space-time coupling manifests itself in the decreasing sophistication of the world as one gets farther from Mesopotamia. This can also be thought of as getting closer to a primeval, natural state and farther from a civilized state. The fundamental underpinning of the space-time correlation is the finite speed of information, a result of the humanity of the information-bearers. This information speed limit has two consequences: news from distant places is necessarily less up-to-date than news from nearby; and distant cultures will differ more from Mesopotamian culture, thereby appearing more primitive.

There are several episodes in the stories of Lugalbanda and Gilgamesh in which this space-time correlation plays a large part. For example, in the Sumerian account of Gilgamesh and Huwawa, Huwawa lives in the mountainous forests of the Zagros to the east. He was placed there by Enlil as a guardian of nature and his powers are compared to great natural disasters.<sup>3</sup> For all his primeval power, he is still stuck in the distant past. He is a primeval force; his power comes from nature, but as a consequence ignorant of the trappings of civilization. One can hardly imagine someone more opposed to this than Gilgamesh, symbol of Mesopotamian civilization. He tricks the innocent Huwawa with false hospitality, by giving trivial gifts that represent the essence of civilization.<sup>4</sup> Only someone uncivilized, who had no

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<sup>2</sup>Woods, 207

<sup>3</sup>Gilgameš II: 218-225 in Andrew George, *The Epic of Gilgamesh* (London: Penguin, 1999), 19

<sup>4</sup>Bilgameš and Huwawa A: 135-151 in Andrew George, *The Epic of Gilgamesh* (London: Penguin, 1999), 155-158

knowledge of the gifts Gilgamesh was offering would have been tricked; also, hospitality customs were often associated with primitive cultures. Huwawa is so connected to the distant past that he could not have been found anywhere but the far east.

Another example of this relationship between time and space is the story of Lugalbanda's transcendence. In *Lugalbanda in the Wilderness*, he is left to die in the far east. After some divine intervention, he recovers from his illness by eating the plant of rejuvenation, an herb found in the east due to its association with rebirth. Once he is healed, he is compared to a wild ass as he is in a pre-civilized state.<sup>5</sup> His adventure in the far east has brought him back to a pre-civilized, animal-like state. Shortly after his recovery, Lugalbanda essentially reinvents civilization. During this, his ignorance is greatly emphasized: "Not knowing how to bake bread, not even knowing what an oven is, with just seven embers he had baked *gizi-ešta* bread..."<sup>6</sup> This underscores the fact that by being so far east of civilization, Lugalbanda is effectively in the distant past; his reinvention of civilization at the dawn of time mirrors his return to the present day of the story.

Lugalbanda's later encounter with Anzud also takes place in the east. He starts by treating Anzud's young with great kindness.<sup>7</sup> By showing hospitality first, he becomes entitled to some hospitality from Anzud. Lugalbanda

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<sup>5</sup>Lugalbanda in the Wilderness: 267-277 in Herman Vanstiphout, *Epics of Sumerian Kings: The Matter of Aratta* (Society of Bible Literature: 2003), 118

<sup>6</sup>Lugalbanda in the Wilderness: 292-293 in Vanstiphout, 121

<sup>7</sup>The Return of Lugalbanda: 50-62, in Vanstiphout, 139

has, in a sense, trapped Anzud with his kindness. This sort of hospitality custom was often associated with primitive cultures; as Anzud lives far to the east, he, too, acts as one from a more primitive time. When Anzud offers him a favor, Lugalbanda rejects the more commonly wished for gifts such as power and wealth. Instead, he opts for superhuman speed.<sup>8</sup> This choice is quite significant; by choosing speed, Lugalbanda breaks the information speed limit, and with it, transcends his humanity.

In ancient Mesopotamia, fates were thought to be cut, immutably, at the beginning of time. Yet they were also cut every morning when the sun rose. This apparent paradox can be explained through the unification of space and time. Taking this into account, it becomes evident that the past and the east share many characteristics due to their similar space-time distances from contemporary Uruk. This similarity is also evident in the literary descriptions of the past and the east. The distant past is described in *Enmerkar and the Lord of Aratta* in the *Spell of Nudimmud*. Even though it describes a hypothetical future, it also harkens to an earlier Golden Age of mankind. The phrase “there will be no snake, no scorpion” is used to describe the idealized, distant past.<sup>9</sup> It is also used to describe Mt. Hašur, Anzud’s home, in *The Return of Lugalbanda*.<sup>10</sup> These two phrases refer to the same time and place, where humans had no natural enemies and the world was at peace. This is logically consistent with a correlation between space and time.

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<sup>8</sup>The Return of Lugalbanda: 132-166, in Vanstiphout 143-145

<sup>9</sup>Enmerkar and the Lord of Aratta 134-155

<sup>10</sup>The Return of Lugalbanda 37

Messengers are the carriers of information, so they are closely tied to the coupling of space and time. They feature heavily in the Sumerian stories about Enmerkar and Lugalbanda. In *Enmerkar and the Lord of Aratta*, the messenger communicates information between Uruk, at the center of the known world, and Aratta, at the edge of it. The distance between Uruk and Aratta is emphasized in *Enmerkar and the Lord of Aratta* through repeated description of the messenger's journey. This arduous repetition brings to attention the difficulties of acquiring knowledge from distant places. Notably, the story ends with the invention of the technology that would conquer these difficulties: writing.<sup>11</sup> *The Return of Lugalbanda* also features a messenger: Lugalbanda himself. With his superhuman speed, he is able to bring information to and from Uruk nearly instantaneously, bringing with him divine wisdom and advice on how to defeat Aratta.<sup>12</sup>

Since knowledge and information are central to human thought and perception, the speed of their transmission has not lost relevance in our understanding of the world today. It is of central importance to the theory of relativity, which unifies space and time in a way surprisingly similar to the Mesopotamian tradition. Instead of messengers bearing textual information, relativity relies on light bearing visual information.

There is a representative concept in relativity, the light cone,<sup>13</sup> which

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<sup>11</sup>Enmerkar and the Lord of Aratta: 503-506 in Vanstiphout, 85

<sup>12</sup>The Return of Lugalbanda: 338-412, in Vanstiphout 155-157

<sup>13</sup>James Hartle, *Gravity: An Introduction to Einstein's General Relativity* (Glenview: Pearson Education, 2003), 58

bears a striking resemblance to the phenomena in Mesopotamian literature discussed above because of its relation to the speed of information. The light cone is a boundary in space-time. Imagine a flash of light at a point on the Earth; now imagine a moment in time, some time after the flash. Since light has a certain speed, it has now reached all points a certain distance away from the initial point. This is a circle on the surface of the Earth; since nothing moves faster than light, there is no way for the initial event to have sent information to anything outside of the circle by that specific moment in time. This is analogous to the effect of having messengers relay information on foot. If time is represented as a third dimension, these successive circles form a cone of sorts, outside of which the initial event cannot affect. Observing events is the exact reverse: receiving instead of sending information.<sup>14</sup> This symmetry means that one cannot observe things distant in space without also observing them in the past, since even light takes time to travel any distance. Since human messengers are much slower than light, the effect of spatial distance on temporal distance is much greater in Mesopotamia.

What this space-time correlation cannot account for, however, is the lack of information the ancient Mesopotamians had about the far east. Since it was at the edge of the Mesopotamian understanding of the world, little was known about the reality of the east. There were no verifiable physical laws; anything was possible. In contrast, the rules of what could and could not be done in Mesopotamia were well-known. It was for this reason that

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<sup>14</sup>Hartle, 59-60

Lugalbanda's transcendence happened in the east. Only in the east would Lugalbanda have been able to eat the plant of rejuvenation and reconnect with man's primeval roots. Only in the east could he have acquired the superhuman speed which allowed him to bring back divine knowledge and become more than human.

The far east also plays a critical role in Gilgamesh's transformation, which consisted mainly of two separate parts: to escape his fate, he must first intercept the *nam-tar* before they are cut in the far east where the sun rises; he must then acquire the wisdom of Uta-Napishti, at his home in the far east. Fortunately for Gilgamesh, these goals are both tied to the far eastern edge of the world.

Gilgamesh's purpose in his journey to the east was to find a way of avoiding death. His fate was determined at the beginning of time; to change it he must somehow intercept his fate before it is determined. Luckily for him, due to the union of the distant past and the distant east, Gilgamesh's fate is also determined every day when and where the Sun rises in the mornings. The Sumerians believed that the future is born and develops in the Netherworld at night, before the fates are cut at dawn.<sup>15</sup> The solution to Gilgamesh's problem, then, is simple: he just has to get to the edge of the world before the Sun rises again. Then, in breaking free of the known world, he will have broken free of his fate.

As Gilgamesh approaches the far eastern edge of the world, his surround-

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<sup>15</sup>Woods, 209



ings become more and more contradictory. Near the end of his journey, he encounters the Path of the Sun, which leads to where the Sun rises: the edge of the world. It begins at Mt. Māšu, meaning “Twin Mountain”, guarded by scorpion-people. Scorpions represent both death and life: they are dangerous predators, yet their unique growth cycle makes them a symbol of rejuvenation.<sup>16</sup> Here he begins a race with the Sun: Gilgamesh attempts to get to the edge of the world before the Sun next rises. Gilgamesh succeeds in doing so, using superhuman speed to break free of his human nature, both literally and figuratively. He emerges into a jeweled garden, another place with an intrinsically contradictory nature. Paradoxes are everywhere: the inn-keeper, Shiduri, is both a wise-woman and a prostitute; there is a boat nearby crewed by the Stone Ones, stone given life; this boat traverses the Waters of Death, but water is requisite for life.<sup>17</sup> Near the edge of the known world, traditional modes of thought and even existence no longer apply.

After some extra effort, Gilgamesh finally reaches Uta-Napishti’s dwelling. In the Standard Babylonian edition, its location is described as “where the rivers flow forth.”<sup>18</sup> These rivers are believed to have their sources in the Apsû,<sup>19</sup> the ocean of the Netherworld. The Apsû is the realm of Enki, god of intelligence, and is the source of all knowledge. It is the informational quality of the Apsû that Gilgamesh taps when he digs wells to divine his actions.<sup>20</sup>

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<sup>16</sup>Woods, 192

<sup>17</sup>Gilgameš X: 1-88 in George, 75-79

<sup>18</sup>Gilgameš XI: 206 in George, 95

<sup>19</sup>Woods, 200

<sup>20</sup>Gilgameš IV: 5 in George, 30

It comes as no surprise, then, that Uta-Napishti dispenses his antediluvian wisdom to Gilgamesh at the mouth of the Apsû. Gilgamesh eventually brings this knowledge acquired outside the world back to Mesopotamia, completing his transformation from an immature tyrant to a good king. This transformation could not have happened without his journey to beyond the eastern edge of the known world.

The transformations of Lugalbanda and Gilgamesh have some common themes. They both require the transformed to break free of the rules of space-time and to go to the edges of the known world. The known world can be understood as a proxy for the entire body of human knowledge. If we look at the transformations of Lugalbanda and Gilgamesh from this perspective, some interesting parallels emerge. The transformations of these two heroes bear some similarity to the process by which human understanding of the world advances. First, they journeyed toward the edges of the world, where normal human understanding breaks down. Then, through some interaction with abnormal, mythical beings, they acquire some special knowledge. Finally, both heroes end up bringing it back to their city of Uruk.

Scientific transformations unfold in a similar fashion. The classic example of such a transformation is the formulation of special relativity. To physics, time and space were held as separate notions. At the same time, it was believed that light traveled at a constant speed. Coarsely speaking, these two statements contradicted in a subtle way; the contradiction was solved by Albert Einstein when he rejected the old understanding of a universe with

absolute time. By stepping outside the existing body of knowledge, he was able to find new knowledge. Then he was able to convince the scientific community of his arguments, transforming the state of our understanding of the world.<sup>21</sup>

These two types of transformations, heroic and scientific, have some structural parallels. The most obvious one is that they both take place at the edges of human understanding, where not much is known and what is known contradicts itself. Where too much is concretely known, there can be no such transformations. They all involve breaking the accepted rules in some way: Lugalbanda and Gilgamesh by achieving superhuman speed, Einstein by rejecting preconceived notions. They also involve proving naysayers wrong. Lugalbanda's brothers and the people of Uruk did not expect the heroes to do what they did. Similarly, Einstein exceeded the expectations of the scientific community when his disruptive theory proved right.

To ancient Mesopotamians, the far east represented rebirth, the unknown, and the past. These are tied together with the notion of information and its relationship with humans. This theme is manifested many times over in human history; it is fundamental enough to connect two conceptualizations of space-time formulated thousands of years apart.

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<sup>21</sup>A much more nuanced and thorough treatment can be found in Thomas Kuhn, *The Structure of Scientific Revolutions* (University of Chicago Press; 3rd edition, 1996)