

THE COSMIC COMPUTER—PIPER'S FOUNDATION?



JOHN A. ANDERSON

MAY 2015

LAST MODIFIED: MAY 20, 2024

1. Introduction: “The Awful Truth”

It is known that H. Beam Piper borrowed plots. Describing John J. McGuire’s collaborations with Piper, his son John McGuire, Jr. said this. “They were very much into the Elizabethans, especially William Shakespeare. Beam loved how Shakespeare wrote both for the highborn and the pit. *They looked for plots in his plays* and sometimes their stories would be titled with Shakespearean quotes.”¹ Since he consciously looked for plots in Shakespeare, it is only a slight stretch to deduce that Piper, who wrote alone for the vast majority of his career, and regularly complained about a lack of story ideas, also looked for plots in the works of other authors whom he admired. This indeed seems to be the case, for one of these authors was Rafael Sabatini, whose historical novel *The Black Swan* appears to be the main source for the plot of Beam’s swashbuckler, *Space Viking*.² He also used Sabatini’s *Life of Cesare Borgia* as a source for his unfinished historical novel, *Only the Arquebus*.³

Another author Piper apparently admired was Isaac Asimov, which brings us to the present thesis. In *The Cosmic Computer*, “the Awful Truth” is mentioned multiple times, usually in regard to Merlin, the Cosmic Computer.⁴ The main character, Conn Maxwell, lies to the people of Poictesme, telling them that Merlin exists, when he knows the Awful Truth that it does not. Later, after Merlin is found (because Conn in turn was lied to by General Foxx Travis), the Awful Truth is transferred to the Terran Federation. Everyone believes that “the Federation would last forever”, but as Conn learns, Merlin predicts that the Federation is actually doomed to dissolve and disappear. So Conn continues “his career of mendacity” by concealing this Awful Truth, because to reveal it would cause “the whole Federation breaking up into bloody anarchy” at the news.

In November 2006, however, I realized that there may be an “Awful Truth” about *The Cosmic Computer* itself. Because the book seems to be H. Beam Piper’s version of Isaac Asimov’s entire Foundation concept. Thus, Beam in turn was lying to us; *The Cosmic Computer* is really a Foundation novel, or, ‘what a Foundation novel would look like in Piper’s universe.’ To quote the man himself, “Now, before anyone starts asking just who’s crazy”,⁵ let’s look at the evidence. And it’s a long list, because the parallels are quite numerous.

2. Young Graduates Join Secret Projects

Both *Foundation* and *The Cosmic Computer* begin in the same way, with a young graduate joining a secret project run by older men, related to the prediction of future events.

Foundation starts with Gaal Dornick, a young graduate from Synnax, who is on his way to Trantor, capital of the First Galactic Empire. “To Gaal, this trip was the undoubted climax of his young, scholarly life...with his doctorate in mathematics freshly obtained and an invitation from the great Hari Seldon to come to Trantor and join the vast and somewhat mysterious Seldon Project.”⁶ Dornick is therefore the youngest mathematician of the group, while Seldon is the oldest, as well as its leader. Using advanced mathematics developed by himself, Hari predicts the end of the Galactic Empire, and has therefore attracted the unwelcome attention of the Imperial Government. He says that “Everything about my project is being investigated.”⁷ Indeed, Dornick is soon detained by the authorities, and his conversation with a lawyer is illegally monitored by a spy-beam. Finally, Seldon himself is arrested and put on trial.⁸ (See **23. Predictors on Trial**, below.)

Dr. Seldon’s project has a secret aspect. And that is to set up two ‘foundations’ in order to create a new or ‘second’ universal state. (See **12. Parallel Secret Plans**, below.)

The Cosmic Computer begins with Conn Maxwell, a young graduate from Poictesme, who is on his way home from Terra, capital of the Second Terran Federation. His degree is in computers, financed by a group of older men. “Most of you gentlemen...contributed to sending me to school on Terra, to study cybernetics and computer theory. It wouldn’t do us any good to find Merlin if none of us could operate it.”⁹ Project Merlin was a vast computer developed during the System States War that was good at, among other things, “predicting future events”.¹⁰ Being classified “TOP SECRET”,¹¹ the location of Merlin is unknown to anyone on Poictesme, so Conn joins these men in a new ‘Merlin Project’ to find the future-predicting Cosmic Computer, with the goal of solving all their problems. (This actually parallels the Search for the Second Foundation; see **33. Parallel Searches for the Hidden Predictor**.)

The Search for Merlin is a secret endeavor. "It is of the first importance...that we keep our real objective—Merlin—as close a secret as possible. The Planetary Government would like to get hold of it...and I have no doubt the Federation might try to take it away from us." ¹² Although they don't yet know it, Merlin predicts the end of the Terran Federation, and their Search therefore attracts the unwelcome attentions of the Planetary and Federation Governments, as well as the Federation Military. Conn's father Rodney says that "There have been some odd things happening. People have been trying to bribe and intimidate some of my office help. I have found microphones and screen pickups planted around. I caught one of our clerks trying to make copies of voice-tapes." ¹³ Later, "There were four attempts to burglarize our offices...The worse thing was Lucy Nocero, my secretary." Lucy disappears, and three days later is found to have been subjected to an illegal mind-probe, leaving her "a complete imbecile." ¹⁴

Like Hari Seldon to Gaal Dornick, Rodney is essentially telling Conn that 'Everything about our project is being investigated.' Through a counter-investigation, they determine that "most of the trouble" is being caused by the Federation Government, in the form of "Sam Murchison, the Terran Federation Minister-General". ¹⁵ But some of the trouble is caused by the Federation Military, as Conn declares that Lucy Nocera was mind-probed by "accomplices" of Mike Shanlee, a retired Federation General. ¹⁶ And finally, the Government of Poictesme is also involved. "Rodney Maxwell had been arrested, on a farrago of fraud charges...and bail was being illegally denied." J. Fitzwilliam Sterber says that "I don't know who he's supposed to have defrauded; the Planetary Government is the sole complainant". ¹⁷

The main difference between Asimov and Piper is that the young graduate Gaal Dornick travels from "a star at the edges of the Blue Drift" to Trantor, the capital of the Empire; ¹⁸ while the young graduate Conn Maxwell travels in the other direction, from Terra, capital of the Federation, to Poictesme circling the star Alpha Gartner, out on the edge. Terra therefore parallels Trantor, and six years previously, Conn did in fact travel to Terra, in his case before entering university, rather than after leaving. ¹⁹

Thus, a true parallel with Gaal would have had Conn remain on the capital planet. And Piper has him reveal an interesting detail. "After I graduated, I was offered a junior instructorship in computer physics at the University [of Montevideo]." ²⁰ Had he made a different choice upon graduating, Conn would indeed have stayed on Terra. Like Gaal Dornick, Conn's degree was 'freshly obtained', and the 'invitation from the great' University of Montevideo to join its faculty would have been 'the undoubted climax of his young, scholarly life.' The University of Montevideo therefore parallels "the University of Trantor" with its "Imperial Library", where Seldon's group, including Dr. Dornick, do their work. ²¹

Notice also the similar names; Gaal, Conn. We will see a couple more.

3. Psychohistory

As stated, one of Merlin's capabilities is "predicting future events". Although it "can't tell what you or I would do under given circumstances, Merlin can handle large-group behavior with absolute accuracy". ²²

Piper's Cosmic Computer therefore parallels Hari Seldon and his successors, the Second Foundation, who can't predict the behavior of individuals, but can predict the behavior of large human masses with great accuracy. Hari Seldon tells Gaal Dornick that "you know how risky it is to introduce the vagaries of an individual in the psychohistoric equations." ²³ Dornick phrases it as "Calculations upon one man mean nothing", and "I quite understand that psychohistory is a statistical science and cannot predict the future of a single man with any accuracy." ²⁴

As for large-group behavior, "*Gaal Dornick, using non-mathematical concepts, has defined psychohistory to be that branch of mathematics which deals with the reactions of human conglomerates to fixed social and economic stimuli...Implicit in all these definitions is the assumption that the...conglomerate being dealt with is sufficiently large for valid statistical treatment...A further necessary assumption is that the human conglomerate be itself unaware of psychohistoric analysis in order that its reactions be truly random...*" ²⁵

Beam never gives Merlin's ability a name, and this was probably deliberate, because it is the same as that of Seldon and the Second Foundation—**psychohistory**. One difference here is Merlin's "absolute accuracy" regarding large-group predictions, while the Second Foundation can only do so to high percentages. For example, Hari Seldon projects "the numerical probability" of the total destruction of Trantor within five centuries at 92.5%. ²⁶

But the main difference is that Asimov's psychohistory is developed due to Seldon's scholarly research into psychology, or human behavior, while Piper's is developed due to wartime necessity. Because unlike the Galactic Empire, which has endured many viceregal revolts,²⁷ in Beam's future history the rebellion of the System States Alliance against the Terran Federation is the very first war on an interstellar scale. As Conn Maxwell puts it, "How do you think they fought a war around a perimeter of close to a thousand light-years? They couldn't do all that out of their heads. They'd have to have computers, and the one they'd use to correlate everything and work out grand-strategy plans would have to be a dilly."²⁸ A computer able to predict enemy intentions with absolute accuracy would be, quite literally, priceless. According to Klem Zareff, a former colonel in the Alliance, "We'd have won the War, except for the Brain [Merlin]. We had ninety systems, a hundred and thirty inhabited planets, a hundred billion people—and we were on the defensive in our own space-area! Every move we made was known and anticipated by the Federation. How could they have done that without something like the Brain [Merlin]?"²⁹

Merlin is called "the Brain" in "Graveyard of Dreams", the short story from which *The Cosmic Computer* grew. And in that story, Conn's instructorship on Terra would have been in "positronic computer theory", rather than computer physics.³⁰ Moreover, the Brain is described as "more than a positronic brain—it was a positronic supermind."³¹ Beam was more sparing with the positronic references in *The Cosmic Computer*, but in regard to Conn's assertion that Merlin is on Koshchei, he talks to the others "about remote controls and radio transmission and positronic brains and neutrino-circuits".³² Thus, Merlin is "a positronic computer" whose parts were manufactured at a "positronic equipment plant on Panurge".³³

All this suggests that Piper was not just modeling the Foundation series, he was also including the robotic concepts of Isaac Asimov, who originated the positronic computer brain.³⁴ But Beam apparently didn't agree with Isaac's lack of robots in the Galactic Empire; his separation of the Foundation and Robot series. Because not only is Merlin developed by the Federation Military, some of Poictesme's civilian robots are converted to combat use in the Battle of Barathrum.³⁵ Beam even has Conn subtly connect the two series. "He'd only had a short introductory course, in one semester, in military and protective robotics, just enough to give him a *foundation* if he wanted to go into that branch of the subject later."³⁶

Piper's military robots put the lie to Asimov's (and John W. Campbell's) famous Three Laws of Robotics, in which no robot can harm a human being, or allow harm to occur through inaction.³⁷ Beam's common-sense reply seems to be that any new technology developed by human beings, including robots, will be used for both peaceful and warlike purposes. And recent history has proven Piper right.

4. Predictions Made by Calculations

Both authors' psychohistories therefore use electronic calculations to predict the end of the First Universal State—the First Galactic Empire in Asimov, the Second Terran Federation in Piper.

In Asimov, Hari Seldon uses a "calculator pad" to display the psychohistoric equations about the Empire's grim future to Gaal Dornick. And later at his trial, Hari says, "I refer, gentlemen, to the developing decline and fall of the Galactic Empire...It is a prediction which is made by mathematics."³⁸

In Piper, General Shanlee reveals that "In two hundred years, there won't be any Terran Federation." Merlin's "long-term *computation* of the general effects of the [System States] War... was supposed to run five hundred years in the future...It stopped, at a point a trifle over two hundred years from now, with a statement that no *computation* could be made further because at that point the Terran Federation would no longer exist." Conn Maxwell then refers to it as "This computation on the future of the Federation".³⁹

The difference seems to be that Asimov's electronic "calculations" are purely mathematical, while Piper's electronic "computations" not only involve mathematics, but science, politics, economics, psychology and even philosophy.⁴⁰ This is because they are based on *all* human knowledge (see 6.).

Moreover, the time scales are similar. The Terran Federation ends "a trifle over two hundred years" after *The Cosmic Computer*, or roughly 245 after the System States War, when Merlin first predicts it.⁴¹ The Galactic Empire ends a little more than three hundred years after "The Encyclopedists" section of *Foundation*, or roughly 365 after Seldon predicts its fall.⁴² Thus, both authors' psychohistories are developed a few centuries before the Fall of the First Universal State.

That Piper's universal state falls much more quickly than Asimov's is probably because it is a much smaller political unit. The First Galactic Empire encompasses the entire Milky Way and contains "nearly twenty-five million inhabited planets".⁴³ The Second Terran Federation, on the other hand, only includes a "half-thousand human-populated planets"⁴⁴ located in the local stellar region around Sol.

5. Both Psychohistories Developed by Fewer than a Hundred Humans

Also, both versions of psychohistory are developed by fewer than a hundred human beings.

In Asimov, psychohistory is mainly developed by one man, Hari Seldon. The Encyclopedia Galactica says that "*Undoubtedly his greatest contributions were in the field of psychohistory. Seldon found the field little more than a set of vague axioms; he left it a profound statistical science...*"⁴⁵ But over time, Hari gathers a larger group of mathematicians to help him with his psychohistoric predictions. At the time of Gaal Dornick's arrival on Trantor, this group consists of "Fifty mathematicians...Dr. Dornick is the fifty-first."⁴⁶ These fifty-one men are the origin of the Second Foundation.

Piper is not explicit, but it is strongly implied that human beings develop his version of psychohistory. Conn Maxwell says that "A computer like Merlin isn't intelligent, or wise, or anything of the sort. It doesn't think; the people who make computers and use them do the thinking. A computer's a tool, like a screwdriver; it has to have a man to use it."⁴⁷ As far as the numbers of humans involved, according to General Mike Shanlee, "There were *fewer than a hundred of us* who knew about" Merlin's prediction of doom for the Federation.⁴⁸ These men are presumably the secret group of programmers and analysts—and, given Merlin's 'computing' ability, *mathematicians*—who are directly involved with Merlin.

The difference is that Piper's "fewer than a hundred" is a bit vague. It *could* mean fifty or fifty-one, as in Asimov, but the sense is more like eighty or ninety. However, this difference is not really significant, because as the case of Gaal Dornick shows, Hari Seldon is still adding to his group. By the time of "The Encyclopedists", fifty years later, the Second Foundation could certainly possess eighty or ninety psychohistoric mathematicians, or even more than a hundred.

6. All Human Knowledge

In addition, Piper says that "Merlin[s]...memory bank contained *all human knowledge*. It was capable of scanning all its data instantaneously, and combining [data], and forming associations, and reasoning with absolute accuracy, and extrapolating to produce new facts, and predicting future events, and..."⁴⁹

This parallels the Encyclopedia Galactica, Asimov's compendium of all human knowledge which was, allegedly, going to cushion the fall of the Galactic Empire. Hari Seldon says that this will be accomplished "By saving the knowledge of the race. *The sum of human knowing* is beyond any one man; any thousand men...we [will] now prepare a giant summary of *all knowledge*".⁵⁰

In this case, Piper's version of Asimov's ideas was to combine the Second Foundation with the Encyclopedia Galactica. Rather than using mathematics alone to predict the future, like Hari Seldon and his psychohistorians, Beam apparently reasoned that it makes more sense for that ability *to be based on the prior accumulation* of all human knowledge. Once you know the socio-politico-economic situation on every known planet, *then* you can extrapolate or calculate future events. This is not just a 'take' on Asimov, it is a major improvement.

7. Poor Planet at the Edge of the Universal State

Merlin, with its memory banks full of human knowledge, is located on Poictesme, a planet out on the fringes of the Terran Federation. The Encyclopedia Galactica, the compendium of all human knowledge, is located on Terminus, out on the very edge of the Galactic Empire.

Poictesme therefore parallels Terminus.

The people of Poictesme are "poorer than snakes" and "live in a poorhouse."⁵¹ When the Trisystem was first colonized, "The other planets...were rich in minerals...So Poictesme had concentrated on agriculture". Thus, Poictesme imports all its metals. The only resources to be found on the planet are leftover war materiel dug up from underground installations by "prospectors" like Rodney Maxwell.⁵²

This of course parallels the fact that Terminus is famously poor in metals. The Encyclopedia Galactica describes Terminus as “*poor in resources and negligible in economic value*”,⁵³ which probably explains why the planet was never previously colonized. The lack of resources particularly involves metal. Mayor Salvor Hardin states that “Terminus is a planet practically without metals. We import it all.” He elaborates that “It hasn’t a trace of iron, copper, or aluminum in the surface rocks, and precious little of anything else.” For that reason, the Foundation’s coinage is made of “Steel”, not silver or gold.⁵⁴

In turn, the lack of precious metals on Terminus is paralleled by Poictesme’s paper money, which is essentially worthless because it is not backed by a gold or silver reserve. Lester Dawes bemoans “that infernal deluge of unsecured paper currency thirty years ago”, which has led to “A bankrupt government, an unemployment rate that rises every year, [and] currency that buys less every month.”⁵⁵

8. Saving the Universal State

As we’ve seen, the original Project Merlin, an effort to build a future-predicting supercomputer containing all human knowledge on Poictesme, saved the Terran Federation from falling apart in a time of rebellion. Piper does not elaborate, but it is possible that an Alliance victory would have encouraged other Federation systems to break away, causing an even greater, if not total, collapse.

But even though Merlin saved the Federation, the Federation will soon fall apart, anyway. Because it is...(Too Late, next.)

This parallels the fact that the Seldon Project, Hari Seldon’s effort to create a Foundation on Terminus, will save the knowledge of the Galactic Empire, by publishing the Encyclopedia Galactica. “By the time Trantor falls, it will be complete and copies will exist in every major library in the galaxy.”⁵⁶ In turn, saving the knowledge of the human race will supposedly save the Empire itself, according to Linge Chen, Chief Commissioner of the Committee of Public Safety. “The Galaxy will know that you are working and fighting the Fall. They will even be told that you will prevent the Fall.”⁵⁷

Nevertheless, the Empire soon begins breaking up. Mayor Hardin: “At least twenty of the outermost prefects of the Galaxy, the entire Periphery as a matter of fact, have begun steering things their own way.”⁵⁸ And why? Because it is...

9. Too Late

The Seldon Project is too late to save the Galactic Empire. Hari Seldon says that “The fall of the Empire, gentlemen, is a massive thing...and not easily fought... and it is too majestic and massive a movement to stop.”⁵⁹ This is later summarized in the Prologue to *Foundation and Empire* as, “It was too late to stop that fall”, because the Galactic Empire “had been falling for centuries before one man became really aware of that fall.”⁶⁰

Similarly, Merlin succeeds in saving the Federation by enabling it to defeat the System States Alliance, but nevertheless, the Federation is finished. “The Terran Federation, overextended, had been cracking for a century before the War; the strain of that conflict had started an irreversible breakup.”⁶¹ Thus, the Merlin Project can’t do anything to stop its eventual collapse. It’s too late for that. When Rodney Maxwell asks his son, “Why didn’t they use Merlin to save the Federation?”, Conn replies, “It’s past saving. It’s been past saving since before the War. The War was what gave it the final shove.”⁶²

The only difference being Piper’s “century” of previous decline, as opposed to Asimov’s “centuries”; probably also related to the Federation being a much smaller universal state than the Galactic Empire.

10. Parallel Aftermaths

The aftermath of both Universal States’ breakups are foreseen in a very similar fashion.

In Asimov, “The Empire will vanish and all its good with it. Its accumulated knowledge will decay and the order it has imposed will vanish. Interstellar wars will be endless; interstellar trade will decay; population will decline; worlds will lose touch with the main body of the Galaxy. —And so matters will remain.”⁶³

And in Piper, "The Government will collapse, slowly. The Space Navy will disintegrate. Planets and systems will lose touch with Terra and with one another. You know what it was like here, just before the War. It will be like that on every planet, even on Terra. Just a slow crumbling, till everything is gone; then every planet will start sliding back, in isolation, into barbarism."⁶⁴

11. Interstellar Wars

As just stated, "Interstellar wars will be endless" after Asimov's Galactic Empire falls.

And though Piper initially makes the Federation's fall sound like a peaceful decay ("Just a slow crumbling", till everything is gone"), on the very next page, he says that the aftermath will include "Interplanetary wars; what we fought the Alliance to prevent."⁶⁵ In his short piece "The Future History", this progresses to "Interplanetary and Interstellar Wars",⁶⁶ and a reference in *Space Viking* finishes the transition to a full *Foundation* parallel. "Survivors on planets hit during *the Interstellar Wars*; from the Eleventh to the Thirteenth Centuries, who lost the machinery of civilization."⁶⁷

Thus, Beam essentially capitalized Asimov's generic 'interstellar wars' into "the Interstellar Wars". And for the people living in post-Federation times, two to three hundred years of Interstellar Wars, after a thousand years of almost uninterrupted peace, could certainly seem 'endless', as in Asimov. Particularly since the Interstellar Wars could have lasted much longer; see **One Thousand Years**, second below.

12. Parallel Secret Plans

So the Seldon Project's real goal is to create a new Universal State, a *Second* Galactic Empire. This will be accomplished through the Seldon Plan, a secretly-predicted course of future events for the people of Terminus to follow. Hari tells them that "From now on, and into the centuries, the path you must take is inevitable. You will be faced with a series of crises, as you are now faced with the first, and in each case your freedom of action will become similarly circumscribed so that you will be forced along one, and only one, path."⁶⁸ He also says, "We cannot stop the Fall. We do not wish to; for Empire culture has lost whatever virility and worth it once had...But this I can tell you: Terminus and its companion Foundation at the other end of the Galaxy are the seeds of the Renaissance and the future founders of the Second Galactic Empire...whatever devious course your future history may take, impress it always upon your descendants that the path has been marked out, and at its end is new and greater Empire!"⁶⁹

Piper parallels the Seldon Plan with "the Merlin Plan", a secretly-predicted course of future events for the people of Poictesme to follow, which will enable them to survive the Fall of the Federation. "Then the Maxwell Plan became the Merlin Plan; the breakup of the Federation was a fact that entered into the computation. Buildup of military strength to resist aggression by other planetary governments. Defense of the Gartner Trisystem. Lists of possible aggressor planets. Revival of interstellar communications and trade; expeditions, conquest and re-education of natives..."⁷⁰ The eventual outcome, as Conn Maxwell foresees hopefully, will be the creation of a Second Universal State; a new Federation. "We can't begin to handle this without Merlin...If that means blowing up the Federation, let it blow. We'll start a new one here" on Poictesme.⁷¹

13. One Thousand Years

Asimov. The Seldon Plan will take "a single millennium", or 1000 years, to create the Second Galactic Empire. This is very important, because without the Plan, the galaxy's human population will suffer a much longer period of barbarism before a Second Empire can be established. Hari Seldon says that "Psychohistory, which can predict the fall, can make statements concerning the succeeding dark ages. The Empire, gentlemen, as has just been said, has stood twelve thousand years. The dark ages to come will endure not twelve, but *thirty* thousand years. A Second Empire will rise, but between it and our civilization will be one thousand generations of suffering humanity. We must fight that."⁷²

The Second Empire is in fact established in 1,000 years, as evidenced by the Encyclopedia Galactica quotations found throughout the Foundation books. These are "taken from the 116th Edition published in 1020 F.E.", or Foundation Era.⁷³ Thus, the Foundation series is ostensibly a History of the Interregnum, published about twenty years after the Second Galactic Empire is established, circa 1000 F.E.⁷⁴

The ever-subtle Piper is not so specific, but the parallels are there. Without the Merlin Plan, his character Mike Shanlee says that “there will be a Galactic night of barbarism for *no one knows how many thousand years*”,⁷⁵ before a Second Universal State will arise. And this brings us to the crucial fact that **1,000 years separate the creation of Merlin from the creation of Beam’s Galactic Empire.**

The Cosmic Computer is built during the System States War, which runs from AE 842 to 854. The midpoint of that range is AE 848, and it is not unreasonable to suppose that the construction of Merlin was completed right about that time. Add one thousand years to AE 848 and you get AE 1848, which according to the timeline in *Empire* is precisely when the First Galactic Empire is proclaimed by King Stevan IV of Marduk, who presumably becomes Emperor Stevan I.⁷⁶

Thus, the Merlin Plan effectively takes ‘a single millenium’ to create the Second Universal State, just like the Seldon Plan.

The main difference is that, had the Merlin Plan *not* failed (**see 26b.**), it would have taken *less* than a thousand years to establish the Second Universal State. Probably only 500 years, since the unsealing of Merlin should have given Poictesme a “five or so centuries” head start.⁷⁷ This is another improvement on Asimov, whose Seldon Plan fails, yet the Second Galactic Empire arises in a thousand years anyway. One would think it should have taken a bit longer.

Another difference is in numbering. Asimov’s First and Second Universal States are the First and Second Galactic Empires. But Piper’s First and Second Universal States are the Second Terran Federation and the First Galactic Empire. (These are actually related to the **Parallel Historical Models**; see **Appendix 1.**)

14. Fifty Years of Secrecy

Both Plans must remain secret for fifty years.

In his first Time Vault recording, Hari Seldon tells the people of Terminus that “It is fifty years now since this Foundation was established—fifty years in which the members of the Foundation have been ignorant of what it was they were working toward. It was necessary that they be ignorant, *but now the necessity is gone.*”⁷⁸

And in Piper, “There was also a statement [by Merlin] that, *after fifty years*, suppression of the truth and circulation of falsely optimistic statements about the Federation *would no longer have any importance.*”⁷⁹ In other words, ‘the necessity for secrecy will be gone’.

Incidentally, Piper’s “falsely optimistic statements about the Federation” seem to refer to a quote from Asimov. For as we’ve seen, after the trial of Hari Seldon is adjourned, Chief Commissioner Linge Chen comes to a private agreement with him, sending Seldon and his group into exile, saying “The Galaxy will know that you are working and fighting the Fall. *They will even be told that you will prevent the Fall.*” This is clearly a suppression of the truth with the intent to circulate falsely optimistic statements about the Galactic Empire. Because Seldon says that “Chen knew I spoke the truth. He is a very clever politician and politicians by the very nature of their work must have an instinctive feeling for the truths of psychohistory.”⁸⁰ Yet Chen allows himself the luxury of disbelief, because he says that Seldon’s forecast is “an unnecessary and uncomfortable five-century future which I will never see”. He adds, “Since I do not believe in so many things, it is not difficult for me to disbelieve in the Fall as well, so that I am entirely convinced I will be telling the truth to the people.”⁸¹

In turn, this quote about Chen seems applicable to one of Piper’s characters. Kurt Fawzi, the Mayor of Litchfield, is the main politician in *The Cosmic Computer*. Throughout the story, he is the foremost proponent of Merlin’s existence, and the most stalwart in the search for Merlin. And at the end, he is about to be elected President of Poictesme. Rodney Maxwell says of him, “Here’s the man most responsible for finding Merlin; the man who first suggested sending my son Conn to Terra to school, the man who, more than anyone else, devoted his life to the search for Merlin, the man whose inextinguishable faith and indomitable courage kept that search alive through its darkest hours.”⁸²

Thus, just like Linge Chen, the master politician of Trantor whose trade gives him “an instinctive feeling for the truths of psychohistory”, Kurt Fawzi, the top politician of Litchfield and now Poictesme, seems to have ‘an instinctive feeling for the truth about Merlin’, Piper’s version of psychohistory.

15. Disclosure Catastrophic

Both the Seldon and Merlin Plans must remain secret, because disclosure of the coming Fall of the Universal State to the general public would catastrophically hasten it.

Asimov; Seldon to Chen. “The fall of Trantor [and by extension, the Empire]...cannot be stopped by any conceivable effort. It can be hastened easily, however. The tale of my interrupted trial will spread through the Galaxy. Frustration of my plans to lighten the disaster will convince people that the future holds no promise to them. Already they recall the lives of their grandfathers with envy. They will see that political revolutions and trade stagnations will increase. The feeling will pervade the Galaxy that only what a man can grasp for himself at that moment will be of any account. Ambitious men will not wait and unscrupulous men will not hang back. Have me killed and *Trantor [the Empire] will fall not within five centuries but within fifty years* and you, yourself, within a single year.”⁸³

Piper; Shanlee to group. “If we made public Merlin's prognosis, the end [of the Federation] would come, *not in two centuries but in less than one*, and it wouldn't be a slow, peaceful decay; it would be a bomb-type reaction. Rebellions. Overthrow of Federation authority, and then revolt and counterrevolt against planetary authority...Interplanetary wars; what we fought the Alliance to prevent. Left in ignorance of the future, people would go on trying to make do with what they had. But if they found out that the Federation was doomed, *everybody would be trying to snatch what they could*, and end by smashing everything.”⁸⁴

In other words, ‘The feeling will pervade the Federation that only what a man can grasp for himself at that moment will be of any account. Ambitious men will not wait and unscrupulous men will not hang back.’

Beam even has Conn repeat the message to his father, Rodney. “You were in Storisende when the Travis statement came out; you saw how people acted. If this story gets out, people will be acting the same way on every planet in the Federation. Not just places like Poictesme; planets like Terra and Baldur and Marduk and Odin and Osiris. It would be the end of everything civilized, everywhere.”⁸⁵

After such a disaster, it would indeed take ‘nobody knows how many thousand years’ until a Second Universal State could be formed. —Thirty, perhaps?

16. Secret Plans Protected by Cover Projects

Both secret Plans involving psychohistory are protected by fraudulent ‘cover’ projects, both of which are denounced by a man in a (wheel) chair, who also happens to be the former head of the project.

In Asimov, the cover project is the Encyclopedia Galactica. As already stated, this project aims to collect and publish all human knowledge, so that “by the time Trantor falls, it will be complete and copies will exist in every major library in the Galaxy.” The declared purpose of the Encyclopedia is to drastically reduce the period of barbarism after the Fall, from thirty thousand years to one thousand.

In Piper, the cover project is ‘the search for Merlin’. This project of the Fawzi’s Office Gang is aimed at locating the Cosmic Computer, which they believe will solve all their planet’s problems. Presumably because its memory bank contains all human knowledge, allowing it to reason “with absolute accuracy”, extrapolate “to produce new facts”, and thereby predict future events. “Merlin’s a robot god, something they can shove all their problems into. As soon as they find Merlin, everybody will be rich and happy, the Government bonds will be redeemed at face value plus interest, the paper money’ll be worth a hundred Federation centisols to the sol, and the leaves and wastepaper will be raked off the Mall, all by magic.”⁸⁶

17. Cover Projects Denounced as Fraud by Head of Project via Recording

However, the Encyclopedia Galactica is actually a fraud, and is denounced by Hari Seldon, the former head of the project, himself. In his first Time Vault appearance, the 3D recording of Hari says that “The Encyclopedia Galactica, to begin with, is a fraud, and always has been!” He continues with, “It is fraudulent in the sense that neither I nor my colleagues care at all whether a single volume of the Encyclopedia is ever published.”⁸⁷ The Encyclopedia is actually a mask protecting the Seldon Plan;

“the infinitely more important project that was, and is, our real plan.”⁸⁸ The Seldon Plan is a secret endeavor to succeed the declining and dissolving Galactic Empire with a “new and greater Empire”.

Likewise, the search for Merlin is a fraud. Some people, such as Conn’s sister Flora and her fiancé, Wade Lucas, believe it is just a scheme to bilk the already-poor Poictesmeans of what little money they have left. As relayed by Sylvie Jacquemont, “Flora says Merlin’s a big fake, and you and your father are using it to rob thousands of widows and orphans of their life savings”.⁸⁹

In fact, to use Asimov’s words, the search for Merlin “is a fraud, and always has been” because the Maxwell men have lied about its existence from the start. Thanks to Conn’s meeting with General Travis on Luna, they believe Merlin does not exist, and are lying about it in order to get the investment and cooperation necessary for the ‘infinitely more important project that is their real plan’; the Maxwell Plan. The purpose of the Maxwell Plan is to restore planetary prosperity, using the search for Merlin as a cover project, or front. But Rodney says, “I’ll see to it that the front is also the main objective”, and later on, Conn openly declares that “I’m not interested in building a new Merlin. I’m not even interested in the original Merlin.” “If I had Merlin in my hip pocket right now, I’d trade it for one good ship like the *City of Asgard* or the *City of Nefertiti*, and give a keg of brandy and a box of cigars to boot.”⁹⁰

Thus, we can paraphrase Asimov again. To Conn Maxwell, ‘Neither I nor my father care at all whether Merlin (with its memory bank containing all human knowledge) is ever found.’

Just as Hari Seldon denounces the fraudulent Encyclopedia Galactica via recorded message, Foxx Travis appears in a recorded message to denounce the fraudulent search for Merlin. “There is absolutely no truth in it, gentlemen...There never was any such computer... Frankly, I’m surprised...Young Maxwell talked to me, here in this room, a couple of years ago; I told him then that nothing of the sort existed. If he’s back on Poictesme telling people there is, he’s lying to them and taking advantage of their credulity. There never was anything called Project Merlin...”⁹¹ But he is lying again, because General Travis himself was the head of Project Merlin, during the System States War. His duplicate Force Command HQ is found to be surrounded by the giant Cosmic Computer. Conn says to Kurt Fawzi, “You always claimed that Merlin was here in Force Command. You had it backward. Force Command is inside Merlin.”⁹²

And in another parallel with Asimov, at the end of his story Piper has the Maxwell Plan grow into “the Merlin Plan”, a secret endeavor to “start a new [universal state] here.” A new and greater Federation, to replace the old one which is starting to fall apart.

18. Project Heads Confined to (Wheel) Chairs

a) *Chair-Bound Project Heads*

After the events of “The Psychohistorians” on Trantor, Hari Seldon is never again seen in the flesh. In his first recorded message on Terminus, he says that he has “suffered a rather inconvenient paralysis”, and so is “confined to this chair and cannot rise to greet you.”⁹³ His appearance is described by Mayor Salvor Hardin as “a figure in a wheelchair!” It is in fact fifty years since Seldon predicted the end of the Empire, so Hari is long dead, and yet to Hardin on Terminus, Seldon’s face in the recording “seemed all alive.”⁹⁴ This becomes one of the lasting images of the Foundation series, as the recorded image of Seldon in a wheelchair is connected with all the major crises faced by the Foundation on Terminus.

Similar to the fifty-year recording of Seldon, Foxx Travis’ recorded message is broadcast forty-two years after Merlin predicts the fall of the Federation. Following the end of the System States War, Travis is not seen on Poictesme in the flesh again, and is widely believed to be dead. When Conn tells his father he met the general while attending the University of Montevideo on Terra, Rodney Maxwell says “Foxx Travis!...I saw him once, when I was eight years old. I thought he’d died long ago. Why, he must be over a hundred.”⁹⁵ Conn replies that he’s “A hundred and twelve. He’s living on Luna; low gravity’s all that keeps him alive.” When Conn had visited him “The old man had been incredibly thin and frail. Under normal gravitation, his life would have gone out like a blown match.”⁹⁶

Thus, Seldon is long dead but looks all alive in the recording on Terminus, while Travis is thought to be long dead, but is still alive as seen in his recording on Poictesme. But he *should* have died decades ago, just like Hari.

Seldon is confined to a wheelchair, and because of his advanced age, Foxx Travis similarly spends most of his time seated. When he first met Conn Maxwell on Luna, “[E]ven at one-sixth G, it had cost him effort to rise and greet the guest.”⁹⁷ In his recorded message, Foxx is again “seated in the deep cushioned chair” Conn first saw him in. However, this time a nurse hands him a liquid “stimulant” to help him give the interview.⁹⁸ This suggests that Travis’ health has declined slightly in the two years since he met Conn. It is quite possible that he is now permanently confined to his chair, like Hari.

Foxx Travis therefore parallels Hari Seldon, and we notice another 4-letter name parallel; Hari, Foxx.

b) Wheel—or Contragravity?

Just as Merlin’s predictive ability is never actually called psychohistory, and the 1000-year span of the Merlin Plan is not stated explicitly, Piper doesn’t specify Travis’ chair as having wheels. Foxx’s chair must be mobile, because his nurse would have to move the old general around his dwelling; from the bedroom to the bathroom, or from the dining room to the living room. Given Luna’s low gravity, it could indeed be a wheelchair, which would be that much easier to move than on one-G Terra.

However, another possibility is that it is a *contragravity* chair. Some of the robots in Beam’s story, including the ones used as floating bombs in the Battle of Barathrum, and the supervisor robots circling overhead in the factory on Koshchei, are powered by contragravity. Moreover, in *Four-Day Planet*, Walter Boyd employs a “contragravity hamper” to carry his audiovisual journalistic equipment around.⁹⁹ These robots, and particularly the hamper, are small enough that the existence of contragravity chairs is certainly a reasonable extrapolation. And the low gravity of Luna would mean that its field need not be particularly powerful.

Assuming that Foxx Travis is in a contragravity chair, this would be another improvement by Piper over Asimov. Because after fifty thousand years of expansion throughout the Galaxy, and a further twelve thousand years of Galactic Empire, with all the technological advances that span of time should entail, it’s a little difficult to believe that incapacitated humans like Hari Seldon will still be using *wheel* chairs.



Figure 1. Recording of the project leader, who denounces his own project while seated—Hari Seldon, or Foxx Travis?¹⁰⁰

c) Low Gravity Prolongs Life

Asimov does not specify Hari Seldon's ailment, but implies that, like Foxx Travis, it is mainly old age. Hari is described as "a man whose body only had grown old." And Seldon himself says, "My doctors tell me that I cannot live longer than a year or two."¹⁰¹ His "inconvenient paralysis" may be due to a stroke, or a heart attack.

So even though Hari is paralyzed and confined to a wheelchair, he presumably *could have lived longer in low gravity*. Asimov apparently did not consider this option. Trantor may or may not have a moon—it is never revealed—but even if it doesn't, Seldon could have relocated to a much smaller world in the Trantorian system. Possibly a dome city on a Mercury-parallel first planet, or a Ceres-parallel asteroid. The Galactic Empire does possess "hyper-video",¹⁰² after all, which would have allowed Hari to remain in constant contact with his team on Trantor. And surely the Seldon Project and Plan could only have benefited from having their creator's genius on the job for a few more years.

Thus, Piper appears to have found another flaw in Asimov's concept, and improved on it.

19. Both Recordings Made at the Capital Planet

Asimov. Despite his statement to Linge Chen that "I accept exile",¹⁰³ Hari Seldon in fact never leaves Trantor. He tells Gaal Dornick that "Most will leave for Terminus, but some will stay", and in the first Time Vault recording says that "Your grandparents left for Terminus a few months back in my time".¹⁰⁴ So all the Crisis recordings Seldon creates for the Time Vault, while seated in his wheel chair, are made on Trantor, the capital planet of the Galactic Empire.

Piper. Similarly, the video of Foxx Travis comes "from Terra", the capital planet of the Federation, as "an exclusive Interworld News Service story". However, the recording itself is actually made on Terra's lone satellite, Luna. "We bring you, now, a recorded interview with General Travis, made on Luna..."¹⁰⁵ This slight difference is due to Piper's improvement on Asimov, by having his 'Hari Seldon' sensibly retire to a smaller world, as stated in the previous section. If Beam *hadn't* improved on Isaac, Travis would have retired on Terra, and died long ago, just like Seldon.

Besides, even though Luna is not precisely the Federation capital, in Piper's universe, satellites are considered 'part' of the planet they orbit. For example, in *Little Fuzzy* the inner satellite of Zarathustra, Darius, is included in the charter of the Zarathustra Company. The outer satellite, Xerxes, "was the one thing about Zarathustra that the Company didn't own; the Terran Federation had retained that as a naval base. It was the one reminder that there was something bigger and more powerful than the Company."¹⁰⁶ Since Darius is considered 'part' of Zarathustra, then Luna is part of Terra, meaning that Travis' recording does effectively come from the capital planet of the Federation.

Furthermore, in Piper's non-THFH story *Lone Star Planet*, Luna is indeed the capital of the Terran Federation; or rather, an alternate version called "the Solar League". The Secretary of State's office is located "on Luna", and Ambassador Stephen Silk "had seen the President of the Solar League wandering around the dome-city of Artemis unattended, looking for all the world like a professor in his academic halls."¹⁰⁷ (Like Dr. Seldon at the Imperial University, perhaps?)

Lone Star Planet begins with a more aggressive attitude on the part of the League. The Department of Defense has been renamed the Department of Aggression, and Security Coordinator Natalenko openly calls the new policy "imperialism".¹⁰⁸ The implication is that if Ambassador Silk's recommendation for more aggressive policies are followed, the Solar League will be transformed into a Galactic Empire. This is humorously suggested by Olga Reznik's comment to Stephen, "Be sure and tell the Secretary [of State Ghopal Singh] that your friends all want important posts in the Galactic Empire",¹⁰⁹ and supported by the annexation of New Texas by the end of the novel. That the Solar League will eventually turn into, or be succeeded by, a Galactic Empire, is therefore very similar to how the Terran Federation is followed by the First Galactic Empire.

It is very interesting that, besides "the Galactic Empire" reference, "psycho-history" is also mentioned in *Lone Star Planet*. When Ambassador Silk is shown the Alamo on New Texas, he is informed that it is not a replica; it's the real Alamo. "I stood there a moment, looking at it. I was remembering, and finally understanding, what my psycho-history lessons about "the Romantic Freeze" had meant."¹¹⁰

20. Both Recordings Connected With Crisis

Both recorded messages are seen not long before the peaceful resolution of a major crisis.

Hari Seldon's recording is viewed by the leaders of Terminus just before the resolution of the first Seldon Crisis. The Kingdom of Anacreon is about to send its space forces to establish a military base on the planet, but this is merely a prelude to "outright annexation and imposition of its own feudal system of landed estates and peasant-aristocracy economy." In the recording, Seldon says that "the solution [to this crisis] is, of course, obvious." To which Salvor Hardin mentally replies, "Obvious as all hell!" This is apparently meant in the affirmative, since he then muses that "In six months, [the Anacreonians] would be giving orders no longer."¹¹¹

We don't learn until early in "The Mayors" that Hardin resolved the crisis peacefully in five weeks. He tells Sef Sermak that "The temptation was great to muster what force we could and put up a fight...What I did, instead, was to visit the three other kingdoms, one by one; point out to each that to allow the secret of atomic power to fall into the hands of Anacreon was the quickest way of cutting their own throats; and suggest gently that they do the obvious thing. That was all. One month after the Anacreonian force had landed on Terminus, their king received a joint ultimatum from his three neighbors. In seven days, the last Anacreonian was off Terminus."¹¹²

Similarly, Foxx Travis' recording is viewed by the leaders (and people) of Poictesme right before the resolution of what can be called the first 'Merlin Crisis'. It is a major crisis because Merlin is about to be opened, which has the potential to cause "the whole Federation breaking up into bloody anarchy".¹¹³ To prevent this, General Shanlee attempts to vaporize Merlin with a vest-pocket thermonuclear; meanwhile, Travis's statement that Merlin doesn't exist and that the Maxwells are perpetrating a fraud causes Rodney Maxwell to be arrested and the stock market to start spinning out of control. Wild and contradictory rumors are flying around; that Merlin has been found, that it's been blown up, that it's been transported to Storisende to advise the government, and even that it is destroying the planet. There's open fighting by various factions in the capital Storisende and "a dozen other places"; then the colonists on Koshchei send a nuclear-backed ultimatum, threatening to destroy Poictesme with super-missiles if their terms are not met. The strain of this whirlwind of events causes Mrs. Maxwell to have "a complete collapse". Thus, the entire planet is in a state of crisis, including Conn's own family.¹¹⁴

At this point, as in Asimov, one can say the solution to the Merlin Crisis is "obvious as all hell"—only in a *negative* connotation. How in the world can anyone successfully deal with all these problems? But in fact—again as in Asimov—the crisis is resolved peacefully. The Poictesmeans are "shocked...into momentary inaction" by the ultimatum from Koshchei; "a cessation of fighting" is quickly reported, and "by midafternoon, the rioting had stopped."¹¹⁵ Within twenty-four hours, "the forces of sanity and order had gotten control again"; the leaders of the various warring factions are arrested, and their followers disperse. Rodney Maxwell is released from prison, and, under pressure, President Jake Vyckhoven "ordered the Stock Exchange closed" and "declared a five-day bank holiday", which keeps the revived planetary economy from collapsing.¹¹⁶ General Shanlee is prevented from blowing up Merlin and taken into custody. The Cosmic Computer itself is opened and revealed as "nothing but a lot of dials and buttons"; in other words, just another computer, causing "the majority" of people to be "ashamed of their hysterical reaction."¹¹⁷ Finally, from an "unconscious" state in which she is "barely breathing", Conn's mother completely recovers from her collapse.¹¹⁸

Mayor Hardin's final words to Sermak about his solution to the first Seldon Crisis could thus be said about the resolution of the first Merlin Crisis. "Now tell me, where was the need for violence?"¹¹⁹

The major difference is that Piper's crisis seems more serious than Asimov's. Because in *Foundation*, there is no rioting by various factions in Terminus City and other locations, the planetary economy is not on the verge of collapsing, Anacreon does not threaten to nuke Terminus into submission, nor is the whole Galactic Empire in immediate peril of "breaking up into bloody anarchy" from Hari Seldon's recorded message that the Empire will end within five centuries.

Another big difference is that, for Salvor Hardin, the ultimatum from Anacreon *is* the Seldon Crisis. But in a wry twist, Beam has the ultimatum from Koshchei *help solve* the Merlin Crisis!

21. “Give Us What We Want in a Week”

Both Crises contain an ultimatum, the expiration date of which is one week.

Prior to dispatching their nuclear-powered space forces, Anacreon sends a politely-worded ultimatum to Terminus. “It started off floridly with a salutation from “His Puissant Majesty, the King of Anacreon, to his friend and brother, Doctor Lewis Pirene, Chairman of the Board of Trustees, of the Encyclopedia Foundation Number One,” and it ended even more lavishly with a gigantic, multicolored seal of the most involved symbolism. But it was an ultimatum just the same.”¹²⁰

The text of this message is not given by Asimov, but using symbolic logic, the Foundation translates it as “You give us what we want in a week, or we beat the hell out of you and take it anyway.”¹²¹

And in Piper, prior to launching their nuclear space-traveling super-missiles, Koshchei sends a politely-worded ultimatum to Poictesme, voiced by Simon Macquarte.

“This is not a threat; this is a solemn, even a prayerful, warning. We do not want to use genocidal weapons of mass destruction against the world of our birth. But whether we do or not rests solely with you.

“We came here with a dream of a better world, a world of happiness and plenty for all...Now you are smashing that dream. When it is gone, we will have nothing to live for--except revenge. And we will take that revenge, make no mistake.

“We have the weapons with which to take it. Remember, this was a Federation naval base and naval arsenal during the War. Here the Federation Navy built their super-missiles, the missiles which devastated Ashmodai, and Belphegor, and Baphomet, and hundreds of these weapons are here. We have them, ready for launching. Once they are launched, with the robo-pilots set for targets on Poictesme, you will have *a hundred and sixty hours*, at the most, to live.

“We will launch them immediately if there is another attack made upon Force Command Duplicate HQ, or upon Interplanetary Building in Storisende, or if Rodney Maxwell is killed, no matter by whom or under what circumstances.

“We beg you, earnestly and prayerfully, not to force us to do this dreadful thing. We speak to each one of you, for each one of you holds the fate of the planet in his own hands.”¹²²

One week is 24 hours times 7 days, or 168 hours. Thus, Macquarte’s “a hundred and sixty hours” works out to be *one week*, less eight hours. Unlike Asimov, Piper does not provide the symbolic logic interpretation of Koshchei’s ultimatum, but Simon is essentially saying, ‘You do what we say, or we launch the missiles, which will beat the nuclear hell out of you in a week.’

It is also interesting that Beam has Macquarte begin with the words “This is not a threat”. Insert Isaac’s phrase from above right here: “But it was an ultimatum just the same.”

Parenthetically, here we see Beam applying what I call a ‘complementary’ approach. Asimov describes the polite preamble and florid signature of Anacreon’s ultimatum, but does not provide the text; only its symbolic logic translation. Piper, however, supplies the exact opposite; what can be called the ‘text’ of Koshchei’s ultimatum—the actual words used to convey the message—but he leaves out a preamble, signature, or symbolic logic translation. In chart form,

	Asimov	Piper
Ultimatum to Foundation planet	Anacreon to Terminus	Koshchei to Poictesme
Preamble	A florid salutation	(None)
Text	(Not given, but politely-worded)	“A solemn, even a prayerful, warning”
Signature	A lavish, gigantic multicolored seal	(None)

Symbolic logic translation	"You give us what we want in a week or we beat the hell out of you and take it anyway"	(Not given, but presumably 'you do what we say or we launch the missiles, which will beat the nuclear hell out of you in a week')
Tone of message	Nominally friendly, "But it was an ultimatum just the same"	"This is not a threat", but it's an ultimatum just the same

Both 'Foundation' planets, Terminus and Poictesme, are therefore threatened. But a final difference is that in Asimov, the belligerent planet Anacreon intends to colonize Terminus, while in Piper, it's the reverse. It is "Koshchei Colony" that threatens to destroy its parent planet, Poictesme.

22. "He Must Be Over a Hundred"

Both chair-bound project leaders who denounce their own cover projects are in their seventies when the initial prediction of doom is made, and well over a hundred at the time of their recorded appearance.

In Asimov, Hari Seldon's precise age is not given, but he "*was born in the 11,988th year of the Galactic Era; died 12,069.*"¹²³ That's a lifespan of 81 years. His young associate (and possible successor) Gaal Dornick "*met Seldon two years before the great mathematician's death*",¹²⁴ so Seldon is 79 at the time Gaal (and the reader) learns that he predicts the end of the Galactic Empire. By extension, if Seldon didn't just "seem all alive" in the recorded message seen on Terminus fifty years later, but *really* were still alive (like Foxx Travis), he would be 129 years old.

In Piper, Foxx Travis is "A hundred and twelve" when Conn visits him on Luna during his "senior midterm vacation".¹²⁵ Conn then presumably finishes his degree in the spring, and the trip home takes "six months", putting the beginning of the story in autumn 894 AE, after the beginning of the wine-melon harvest.¹²⁶ As we've seen, AE 894 is forty years after the end of the System States War, so Foxx was 72 years old (112 minus 40) when Merlin predicted the end of the Terran Federation. This is just seven years younger than Seldon in "The Psychohistorians". His recorded message is made two years after Conn's visit, so Travis is now 114. But if it was broadcast at the fifty year mark, like Hari Seldon's, rather than at the forty-two year mark, Foxx would be eight years older, or 122.

To summarize,

Seldon: 79 (when initial prediction of doom for the Empire is made), 121 (if recording seen forty-two years later instead of fifty), 129 (when recording seen on Terminus at fifty-year mark), 79 (actual age in recording).

Travis: 72 (when initial prediction of doom for the Federation is made), 114 (when recording seen on Poictesme forty-two years later), 122 (if recording seen fifty years after the War instead of forty-two), 114 (actual age in recording).

23. Predictors on Trial

In both tales, everyone knows that the Universal State will last "forever", so the predictions of doom are initially greeted with disbelief, and actually provoke judicial proceedings against the predictor.

a) *The Universal State "Would Last Forever"*

In Asimov, Hari Seldon "keeps predicting disaster", and so is called "Raven" Seldon.¹²⁷ His dire predictions about the Galactic Empire come to the attention of Imperial authorities, who arrest him. At the trial of Seldon, members of the Commission of Public Safety sit in judgment. "Five of the Commission of Public Safety sat behind the raised desk. They wore scarlet and gold uniforms and the shining, close-fitting plastic caps that were the sign of their judicial function."¹²⁸

The Advocate for the Commission then questions Seldon, who answers him.

"Q. Is it not obvious to anyone that the Empire is as strong as it ever was?"

A. The appearance of strength is all about you. *It would seem to last forever.* However, Mr. Advocate, the rotten tree-trunk, until the very moment the storm-blast breaks it in two, has all the appearance of might it ever had. Listen with the ears of psychohistory, and you will hear the creaking."¹²⁹

Since the Empire has lasted 12,000 years, a general belief that it will "last forever" is quite reasonable.

In Piper, " "No more Federation?" Judge Ledue asked, incredulously. "Why, the Federation, the Federation..." *The Federation would last forever.* Anybody knew that. There just couldn't be no more Federation. "That's right," Shanlee said. "We had trouble believing it too." "¹³⁰

In addition to the presence of 'Judge' Ledue, it is also significant that Merlin, who predicts disaster like Seldon, is put on trial. Actually, the Cosmic Computer is directed to try itself. Conn: "Let's not try to decide it ourselves...Let's get Merlin into operation and run a computation on it." Judge Ledue is again incredulous. "You mean, ask Merlin to tell us whether it ought to be destroyed or not?...Let Merlin put itself on trial, and [possibly] sentence itself to destruction?" Conn: "Merlin is a computer; computers deal only in facts...If Merlin ought to be destroyed, Merlin will tell us so."¹³¹

b) Possible Destruction of the Predictors

In Asimov, there is a chance that the disaster-predicting Hari Seldon will be convicted and put to death. " "Are you in danger, sir?" "Oh, yes. There is a probability of 1.7% that I will be executed." "¹³² Seldon is even directly threatened by the Chief Commissioner. "Can you tell me why I may not rid myself of yourself and of an uncomfortable and unnecessary five-century future which I will never see by having you executed tonight?" "¹³³

In Piper, as we've just seen, the disaster-predicting Merlin may sentence itself to destruction. And there are a couple of other chances for Merlin to be destroyed. First, it comes under direct threat from General Shanlee, who plots to destroy the Cosmic Computer with a "Vest-pocket thermonuclear." Failing that, he twice tries to convince the Poictesmeans—horrified at the possible immediate destruction of the Federation—to do it themselves. "Then pull everyone out of here and blow the place up, Merlin along with it", he says, and then, "Let me beg, again, that you destroy the whole thing."¹³⁴ But finally, even Merlin's biggest advocate, Kurt Fawzi, agrees to leave the death sentence up to Merlin. "If Merlin says we ought to, we'll have to do it."¹³⁵

When they tape in "the big question", whether the Cosmic Computer should be destroyed, "Merlin took a good five minutes to work that one out. The question had to include a full description of Merlin, and a statement of the information which must be kept secret."¹³⁶

Paraphrasing Asimov, the big question put to Merlin amounts to 'Can you tell us why we should not rid ourselves of you and of an uncomfortable and unnecessary two-century future which we will never see by having you destroyed tonight?'

c) Destruction of the Predictors Will Not End Secret Plans

Referring to the effect of his possible execution, Hari Seldon says: "But of course that will not stop the project. We have taken that into account as well."¹³⁷

Likewise, the Maxwell/Merlin Plan can proceed without Merlin. " "You know, we can keep the destruction of Merlin a secret," Conn said. "It'll take some work down at the power planet, but we can overload all the circuits and burn everything out at once...Then...we can tinker up something in the operating room that'll turn out what will look like computation results. As far as anybody outside ourselves will know, Merlin will still be solving everybody's problems. We'll do like any fortune teller; tell the customer what he wants to believe and keep him happy." "¹³⁸

d) Neither Predictor is Convicted or Destroyed

Although computations on individuals are highly suspect, Seldon nevertheless deduces that the Commissioners "will adjourn the trial and try to come to a private agreement with me." He is right, and

during their meeting behind closed doors, Hari talks himself out of a death sentence by convincing the Chief Commissioner that he and the Galactic Empire will be much better off if Seldon is allowed to live.¹³⁹

Thus, since Seldon is permitted to remain on Trantor, continues with his project until his death two years later, and indeed maneuvered the exile to Terminus in the first place,¹⁴⁰ he is essentially acquitted.

Similarly, Merlin is also acquitted, and 'remains on Poictesme'; that is, he is not condemned to be destroyed. When they bring Merlin's final decision "down to the office below" (a private meeting, as in Asimov), "All of them were silent, until Judge Ledue took his cigar from his mouth. "Has the jury reached a verdict?" he asked, clinging with courtroom formality to his self-control. "Yes, your Honor. We find the defendant, Merlin, not guilty as charged." " As Conn puts it, "Well, that's it...Merlin thought himself out of a death sentence."¹⁴¹

e) Neither Judicial Proceedings are Actual Trials

Of Seldon's trial, "Gaal supposed it to be one, though it bore little resemblance legalistically to the elaborate trial techniques Gaal had read of...The audience was small and drawn exclusively from among the Barons of the Empire. Press and public were excluded and it was doubtful that any significant number of outsiders even knew that a trial of Seldon was being conducted."¹⁴²

And the 'trial' of Merlin bears little resemblance to a real one as well. It is not held in a courtroom, but at Force Command Duplicate. It is run by an *ad hoc* group of people—"For the most part, they were the same men who had been in Fawzi's office on the afternoon of Conn's return, a year and a half ago."¹⁴³ The press and public are excluded, and it is doubtful that any significant number outside the group even know that a trial of Merlin is being conducted. Moreover, only Judge Ledue's presence gives it the veneer of an official legal proceeding.

f) Both 'Trials' Involve Five Judges

As stated above, Hari Seldon is confronted by "Five of the Commission of Public Safety [who] sat behind the raised desk...[in] their judicial function." Later they are called "the five judges".¹⁴⁴

And as for deciding the fate of Merlin, Judge Ledue says that "We'll have to talk it over among ourselves... *The five of us*, here, cannot presume to speak for everybody." These five 'judges' are "Conn and Kurt Fawzi and Dolf Kellton and Judge Ledue and Tom Brangwyn". This reveals a slight difference from Asimov, because a little later, "everybody" is defined as "There were only a score of them who could be let in on the actual facts."¹⁴⁵ A score is 20, so minus the five 'judges', that leaves 15. Thus, the other fifteen who are presented with the facts could be considered a 'jury', usually defined as a group of twelve people. In *Foundation*, there is no jury.

But in the ultimate number of judges involved, Piper again follows Asimov by having just one. The other four Commissioners defer to Chief Commissioner Linge Chen, who makes the final decision on Seldon's fate. And though Judge Ledue and the other four consult with the whole Maxwell-Fawzi group, all of them actually defer to Merlin, who makes the final decision on his own fate.

The main difference for this topic is that in Asimov, the disaster-predicting Hari Seldon is put on trial at the beginning of the *Foundation* series. But in Piper, the disaster-predicting Merlin is not put on trial until near the end of the novel. That's because Merlin has to be found before they learn that he predicts disaster, but just as in Seldon's case, it is when they learn he predicts disaster that he is put on trial.

24. "An Entirely New Religion"

In both *Foundation* and *The Cosmic Computer*, a brand-new monotheistic religion appears when the First Universal State begins breaking up.

a) The Galactic Spirit and His Prophet

In *Foundation*, the new monotheistic religion is centered around "the Galactic Spirit"; an imaginary omniscient cosmic deity.¹⁴⁶ High Priest Poly Verisof says that "It is remarkable, Hardin, how the religion

of science has grabbed hold...Treating the problem sociologically, it would seem that when the old Empire began to rot at the fringes, it could be considered that science, as science, had failed. To be reaccepted it would have to present itself in another guise—and it has done just that. It works out beautifully when you use symbolic logic to help out.”¹⁴⁷ (See *The Cosmic God Reaccepted*, below.)

The general public’s acceptance of the scientific religion of the Galactic Spirit, at least among the Four Kingdoms, is voiced by King Lepold of Anacreon. “Everyone believes it just the same. I mean all this talk about the Prophet Hari Seldon and how he appointed the Foundation to carry on his commandments that there might some day be a return of the Earthly Paradise: and how anyone who disobeys his commandments will be destroyed for eternity. They believe it. I’ve presided at festivals, and I’m sure they do.”¹⁴⁸

This description implies that the creed of the Galactic Spirit is not just a ‘new faith’ in science, it is the Seldon Plan turned into a religion, with the Second Galactic Empire being the returned Earthly Paradise, and the ‘prophetic’ psychohistory of Hari Seldon leading the way. In fact, it may be the first entirely new religion since the Galactic Empire began, twelve thousand years before.

b) “A Robot God” and His Prophet

In *The Cosmic Computer*, the new monotheistic religion is centered around Merlin, the greatest achievement of Terran technology. It can therefore be called a ‘religion of science’ (or perhaps robotics). As Rodney Maxwell says, “Merlin’s a religion with those people. Merlin’s a robot god, something they can shove all their problems into. As soon as they find Merlin, everybody will be rich and happy, the Government bonds will be redeemed at face value plus interest, the paper money’ll be worth a hundred Federation centisols to the sol, and the leaves and wastepaper will be raked off the Mall, all by magic.”¹⁴⁹

It is notable that, at the end of Piper’s story, this is just about the situation on Poictesme. Everybody is happy, everybody is making millions, the currency is sound, and Litchfield has been cleaned up! Since all their problems have been solved, it is fair to say that the Poictesmeans are living in “a return of the Earthly [or Terro-Human] Paradise”.

In addition to Merlin being described as “a robot god”, it is said that “if you’d asked such a computer, “Is there a God?” it would have simply answered, “Present.” ”¹⁵⁰ Thus, by combining robot god with Cosmic Computer, Merlin becomes a sort of ‘Cosmic God’; Piper’s version of the Galactic Spirit. The people who believe in Merlin are referred to as “a religious community”, and, disparagingly, as “Merlin-worshippers”, “Merlinolators” and “True Believer[s]”.¹⁵¹

The Cosmic God even has a Prophet. General Foxx Travis’ younger protégé, General Mike Shanlee, travels to Poictesme and adopts a local disguise, as “Mr. Carl Leibert. He’s some kind of a clergyman, from over Morven way.” In his alias as the Reverend Leibert, Shanlee is dubbed “the Prophet of Merlin”.¹⁵² A parallel of Hari Seldon, the Prophet of the Galactic Spirit. And it is the ‘Prophet’ Leibert who “says that Merlin could formulate *an entirely new religion, which would regenerate humanity*.”¹⁵³ Presumably, this would be the Merlin Plan turned into a religion, with the Second Universal State being the regenerated Terro-Humanity, and the ‘prophetic’ or psychohistoric ability of Merlin (programmed by Leibert/Shanlee, Conn Maxwell and others) leading the way.

Hari Seldon’s ‘prophecy’ can be stated as, ‘if you follow my commandments, the Earthly Paradise will return in a thousand years’. And the ‘prophet’ Leibert says something similar to Conn Maxwell. “Bless you, young man! It is to you alone that we owe our thanks that we are about to find the Great Computer. Every sapient being will honor your name *for a thousand years*.”¹⁵⁴ Combining Leibert/Shanlee’s statements, his ‘prophecy’ can therefore be phrased as, ‘finding Merlin will enable it to formulate a new religion, whose followers will regenerate humanity in a thousand years.’

c) Shanlee and Seldon

Thus, not only does Foxx Travis parallel Hari Seldon, Mike Shanlee parallels him, too. Travis’ first name is cleverly connected to Seldon’s (Hari, Foxx), while Mike’s surname seems to parallel Hari’s; Seldon, Shanlee. Indeed, by dropping the duplicated e, and rearranging the letters, Shanlee becomes ‘Selhan’.

This parallel is also supported by Mike Shanlee’s age. As we’ve seen, Hari Seldon headed the Seldon

Project and was 79 years old when he predicted the end of the Galactic Empire, while Foxx Travis ran the original Merlin Project, and was 72 when Merlin predicted the end of the Federation. Late in *The Cosmic Computer*, Merlin predicts the end of the Federation for a second time. “They ran off the computations Merlin had made forty years before, and rechecked them. There had been no error.”¹⁵⁵ And this time, it’s Mike Shanlee’s turn to be in charge. He is currently “seventy-some” years old, and at the novel’s end, Shanlee “had stayed on Poictesme as the nominal head of [the new] Project Merlin, and intended to remain there for the rest of his life.”¹⁵⁶

Thus, Hari Seldon, Seldon Project head and 79 when the Empire’s doom is first predicted; Foxx Travis, Project Merlin head and 72 when the Federation’s doom is first predicted; Mike Shanlee, new Merlin Project head and 70-some when the Federation’s doom is again predicted.

d) Differences

One obvious difference is that Asimov’s project leader is purely a scholar, while Piper’s dual project leaders are military men. Perfectly logical, given that Beam was a keen student of military history, presumably leading him to reason that a science like psychohistory would more likely be a *development of military planners*, whose purpose is to anticipate their enemy’s moves in order to defeat them. Thus, Piper’s version of psychohistory is logically invented during wartime; a common-enough catalyst for new technologies and weapons to achieve victory.

In Beam’s lifetime, the prime example of that situation was WWII. The pinnacle of weapons development then was America’s top secret Manhattan Project, which produced the atomic bomb that forced the Japanese to promptly surrender, unconditionally. Piper’s version of the Manhattan Project seems to be the top secret Project Merlin, which develops a supercomputer whose ability to accurately calculate future events, decisively—in fact, *suddenly*—wins the System States War. For according to General Shanlee, “The whole Alliance caved in all at once.”¹⁵⁷ A parallel of unconditional surrender.

Another difference is that Asimov’s Galactic Spirit is phony, while Piper’s Cosmic Robot-God is quite real—although at first, Merlin is *presented in the story* as phony.

But the most important difference is that the religion of the Galactic Spirit is a real faith, with priests and High Priests, religious schools and ceremonials, its own holy book and quoted passages.¹⁵⁸ On Poictesme, however, the belief in Merlin is never a formal religion. There are several factions, but they are more political than religious, and the only faction in favor of Merlin is neo-fascist. These are the Cybernarchists, who want Merlin to take over the Government, and “started wearing colored-shirt uniforms and greeting each other with an archaic stiff-arm salute, and the words “Hail Merlin!”” Then, there is “another cult, non-religious, [which] was convinced that Merlin was a living machine, with conscious intelligence of its own and awesome psi-powers, a sort of super-Golem, which, if found and awakened, would enslave the whole Galaxy.” This anti-Merlin group is “the Human Supremacy League”. Then there are the Armageddonists, also anti-Merlin. The only religious faction, the Armageddonists are led by a “gospel shouter” in the west, and believe that “Merlin was really Satan in mechanical shape”.¹⁵⁹

A true parallel with Asimov would have Merlin as the actual center of an organized religion. And we recall that the Galactic Spirit creed arises *after* the Galactic Empire begins breaking up, while *The Cosmic Computer* takes place *before* the Terran Federation starts dissolving. Thus, the formal religion of Merlin should appear a couple of centuries later, after the final Federation breakup begins—and that is precisely what we find. (Again, see *The Cosmic God Reaccepted*.)

25. Both New Religions Die Out

a) A Temporary Faith

The religion of the Galactic Spirit is a temporary faith. It begins sometime between F.E. 50 (“The Encyclopedists”), and F.E. 80 (“The Mayors”). By around F.E. 157 (“The Merchant Princes”), Hober Mallow says that “in the Seldon scheme, religion is played out”,¹⁶⁰ and by circa F.E. 197 (“The General”), it isn’t mentioned at all. Thus, the creed of the Galactic Spirit lasts for a bit more than a century; roughly F.E. 65 to 179, never to be heard about again, except as an item of historical interest in the Encyclopedia Galactica. “...Undoubtedly the most interesting aspect of the history of the Four Kingdoms involves the strange society forced temporarily upon it during the administration of Salvor Hardin...”¹⁶¹

And by the end of *The Cosmic Computer*, the people's faith in Merlin is replaced with either disbelief, or just plain common sense. After General Travis denounces the Maxwells and denies the existence of Merlin, none other than the 'Prophet of Merlin', Carl Leibert himself, screams "Can it be a lie? Is there no Great Computer?...[Conn] has been lying to us all along!...He has created false hopes; he has given us faith in a delusion. Why, he is the wickedest monster in human history!"¹⁶² Marshall Tom Brangwynn replies skeptically, "Seems to me you lost faith in Merlin awfully quick".¹⁶³ And when Merlin is finally uncovered, and revealed as a very large, but very mechanical, computer, the rival factions of Poictesme cease fighting. The leaders are arrested, and "their followers dispersed, realizing that Merlin was nothing but a lot of dials and buttons, and interestedly watching the broadcast views of it."¹⁶⁴

b) The Cosmic God Reaccepted

However, Piper's monotheistic religion reappears in another form, just when it should—after the Federation begins dissolving. To paraphrase Poly Verisof, High Priest of the Galactic Spirit (who, like the 'Prophet of Merlin' Carl Leibert, doesn't believe in his own god), the failure of the Merlin Plan means that 'Merlin, as Merlin, had failed. *To be reaccepted Merlin would have to present itself in another guise—and it does just that.*'

This explains how and why Merlin transforms into "Yah, the Almighty", the Cosmic God or Galactic Spirit of the Gilgameshers.¹⁶⁵ In *Space Viking*, "Their society seemed to be a loose theo-socialism, and their religion an absurd potpourri of *most of the major monotheisms of the Federation period*, plus doctrinal and ritualistic innovations of their own."¹⁶⁶ The italicized portion of that quote parallels the religion of the Galactic Spirit. "Ethically, it's fine. It scarcely varies from *the various philosophies of the old Empire*. High moral standards and all that."¹⁶⁷ And the "absurd potpourri" of Yah's creed seems very similar to that of Asimov's Galactic Spirit, which is derisively described as "outrageous" and "balderdash". Sef Sermak tells Salvor Hardin that "you were forced to surround these scientific gifts with *the most outrageous mummerly*. *You've made half religion, half balderdash out of it*. You've erected a hierarchy of priests and complicated, meaningless ritual."¹⁶⁸

In support of the Merlin/Yah connection, Piper even borrows one of Asimov's adjectives. When 'the Prophet of Merlin' Carl Liebert makes the Cosmic Computer's existence actually seem plausible, Conn has to mentally reassert his unbelief. "Aaaagh! Was he beginning to believe *this balderdash* himself?" We also recall that Poictesmeans like Flora, Rodney and Conn Maxwell look down on those who believe in an all-powerful computer as irrational "Merlin worshipers", "Merlinolators" and "True Believer[s]". Centuries later, this antipathy resurfaces in regard to the Gilgameshers, whose hodge-podge of a religion and superior attitude make them "generally disliked" among other Terro-Humans.¹⁶⁹ Furthermore, the "loose theo-socialism" of Gilgamesh seems to parallel "*the pseudo-religious despotism of the Four Kingdoms*" mentioned in the Encyclopedia Galactica.

As an amalgamation of preexisting monotheisms, plus creative additions, the faith of Gilgamesh can be called 'an entirely new religion'; possibly the first brand-new religion since the Federation began. This also connects Yah with Merlin, the robot god that "could formulate an entirely new religion, which would regenerate humanity."

Confirmation comes from Piper himself, in three forms. First, although this takes us beyond his published writings, he is reported to have told Jerry Pournelle that, after the failure of the Merlin Plan on Poictesme, which occurs sometime during the Interstellar Wars following the Federation breakup, *Merlin is physically transferred to Gilgamesh*, there to begin the Merlin Plan again, under another, this time secret, guise. In an Asimovian context, that makes perfect sense, because the future-predicting Merlin parallels the future-predicting Second Foundation, which, after its cover is blown in defeating the Mule, restores its secrecy so that its manipulations of history will again go undetected.

Second, that Merlin and Yah are the same thing is suggested in *The Cosmic Computer*. As we've seen, asking Merlin if there is a God results in an answer of "Present". That is to say, 'I am God', or 'I am'. And 'I am' is precisely what 'Yah' means. Yah is undoubtedly derived from Yahweh, the deity of Judaism, one of the major monotheisms of the Federation period. And the definition of Yahweh is 'I am (Yah) that am (Weh)'.¹⁷⁰ Moses was given this Name of God in His presence, at the burning bush on Mount Sinai.

I am (God) that am (Here, Present); ergo, Yah (I am) Merlin (God, Present).

And third, we recall that the Human-Supremacy League believes Merlin is “a living machine...a sort of super-Golem”. Golem is a Hebrew word, denoting a manlike figure “molded of clay by various medieval Jewish rabbis and animated by a “shem” or name of God.” In my dictionary, the second definition of golem is “an automaton”, meaning that it is a primitive form of robot. It is described as such by Isaac Asimov in his book, *The Rest of the Robots*.¹⁷¹

In animating a golem, the most likely Name of God that would have been used by those medieval rabbis is “Yahweh”. Thus, calling Merlin a super-Golem is analogous to saying he is a ‘Jewish super-robot, animated by Yahweh’. And this is very close to the truth; for after being transferred to Gilgamesh, Merlin becomes the super-robot of Piper’s Jews, the neo-medieval Gilgameshers, and is ‘animated by’ (takes on the guise of) a Name of God—Yahweh, or rather, “Yah”.

Given these parallels, it is very interesting that, in a subtle connection with Gilgamesh and Yah/Merlin, Piper also introduces the planet “Tetragrammaton” in *Space Viking*. Tetragrammaton refers to the four Hebrew consonants which spell out Yahweh, and is transliterated as YHWH.¹⁷² Since Merlin is Yah (‘I am’ God, or YH), he is also ‘Present’ (‘That am’ here, or WH) in *Space Viking*. Lurking behind the scenes, just like the Second Foundation.

Although in *The Cosmic Computer*, the ‘Prophet of Merlin’ Carl Leibert is a phony, his statement nevertheless turns out to be truly prophetic. Merlin, the openly revealed Cosmic Computer-God of the late Federation, does in fact “formulate an entirely new religion” and becomes Yah, the secret Galactic Spirit of the Gilgameshers during the Interregnum. Just as the faith of the Galactic Spirit is the religious version of the Seldon Plan, “Yah” and the Gilgameshers are striving behind the scenes to “regenerate humanity”, by fulfilling the Merlin Plan, which will create a Second Universal State.¹⁷³

Beam’s first change here was to combine his Second Foundation (Merlin) with the religion of the First Foundation (Galactic Spirit). Thus, it may be considered another improvement on Asimov, although not a major one. Because the First Foundation is already following the Plan of the ‘Prophet’ Seldon, whose *actual* ‘high priests’ are the psychohistorians of the Second Foundation.

His second change was to ‘double’ the new religion’s appearance. The temporary faith of Merlin appropriately appears after the temporary breakup of the Terran Federation in the System States War. But the permanent faith of Yah the Almighty appears after the permanent breakup of the Federation in the Interstellar Wars. This is another improvement by Piper, because Asimov mentions no new temporary faiths arising from the various viceregal revolts of the late-Imperial period, when the peoples’ faith in the allegedly-eternal Galactic Empire should have been shaken.¹⁷⁴

After very promising beginnings, however, we find that

26. Both the Seldon Plan and the Merlin Plan Fail

a) *The Seldon Plan Fails; A Single Mutant*

In Asimov, the Seldon Plan gets off to a good start. The first threat from a newly-independent Anacreon is peacefully neutralized, and the neighboring Four Kingdoms soon come under the Foundation’s quasi-religious, scientific dominance. The closed and xenophobic planet of Askone rejects atomic power, but is later brought in through trade. Then the Republic of Korell is defeated by economic forces, and finally the Galactic Empire itself is defeated in open war, mainly due to its own internal socio-political problems. The Foundation seems unstoppable.

However, not long after this, the Seldon Plan is disrupted by a single man known as the Mule. He is able to succeed where even the Empire failed, partly because the behavior of individuals cannot be predicted in Seldon’s psychohistory, but mostly because the Mule is a mutant. Using his “ability to mold men’s emotions and shape their minds”, “His bitterest opponents were made into his devoted servants. Armies could not, *would* not, fight him.”¹⁷⁵ The Mule himself describes his rise to power. “Through a pirate, I obtained my first asteroidal base of operations. Through an industrialist I got my first foothold on a planet. Through a variety of others ending with the warlord of Kalgan, I won Kalgan itself and got a navy. After that, it was the Foundation”.¹⁷⁶ And “Before him, the First Foundation fell and Seldon’s schemes lay partly in ruins.”¹⁷⁷

But only partly because the Second Foundation, the masters of psychohistory, still exist.

b) The Merlin Plan Fails; A Single Bullet?

In Piper, the Merlin Plan presumably gets off to a good start. The first threat of annihilation from Koshchei Colony peacefully subsides, and Poictesme is economically prosperous by the end of *The Cosmic Computer*. It is suggested that military power will soon follow. "Build-up of military strength to resist aggression by other planetary governments. Defense of the Gartner Trisystem. Lists of possible aggressor planets. Revival of interstellar communications and trade; expeditions, conquest and re-education of natives..." When the Federation begins breaking up, Poictesme will therefore economically and militarily begin dominating its newly-independent neighbors. In economic terms, this certainly parallels Terminus; but Piper again improved on Asimov, by making Poictesme militarily strong.¹⁷⁸

In fact, the Foundation model actually suggests that at some later point, Poictesme becomes powerful enough to be seen as a threat by at least one Federation general officer, who receives permission from the President on Terra to move against it—and just like "the Twentieth Fleet of the Border" under General Bel Riose, his Fleet-Army task force is defeated! Rather than the "Empire versus Foundation" of Lathan Devers,¹⁷⁹ this event in Piper would presumably become 'Federation versus Federation'; the old, corrupt and steadily-shrinking Terran Federation against a new, vibrantly growing 'Poictesmean Federation'.

However, Poictesme and Merlin are not mentioned in later stories; neither *Space Viking* nor the two tales of the First Galactic Empire, "A Slave is a Slave" and "Ministry of Disturbance". Thus, despite Conn Maxwell's optimistic prognosis and the planet's apparently promising future, Poictesme does not succeed in creating a new Universal State—the Merlin Plan fails.

Fortunately it is only a partial failure, because as we've seen, Merlin, the future predicting super-computer, still exists, having been relocated to Gilgamesh.

Although Piper never provided an explicit reason, he implies that, just as in Asimov, the failure of the Merlin Plan is due to the actions of a single person. We recall General Shanlee's statement that "Merlin can't predict what you or I would do under given circumstances". This suggests that one, or perhaps *two* individuals ("you or I"), are the cause of Poictesme's failure to create a new Federation. This certainly does not involve mutants, as there are no mutants in Piper's works.

But Beam's individuals usually carry firearms, and in *The Cosmic Computer*, a particularly acrimonious business conference among the new companies at Storisende almost results in a gunfight. "...And a banker who was stockholder in all the companies was shouting that they were all a gang of crooks, and J. Fitzwilliam Sterber was declaring that anybody who called him a crook could continue the discussion through seconds. *Conn suddenly realized that dueling had never been illegal on Poictesme.* He wondered how many duels this meeting was going to hatch."¹⁸⁰

It is therefore quite conceivable that *a single bullet* is the unforeseen catalyst for the disastrous turn of events that cause the Merlin Plan to fail. A heated argument between two influential men could result in a duel; the outcome setting off a resurgence of the factional battles seen in *The Cosmic Computer*. In the novel, they practically amounted to civil war ("the whole planet's in anarchy") which was successfully defused; but in this later case, the new outbreak of faction-fighting presumably does lead to civil war. Given all the armaments in the Trisystem, and especially the super-missiles on Koshchei, the civil war becomes planetwide—perhaps even interplanetary—and goes nuclear. A precedent in *The Cosmic Computer* is the Battle of Barathrum, where at least ten nuclear weapons are detonated—and that's just in the process of wiping out Blackie Perales' gang of outlaws.¹⁸¹

The deduced planetary or interplanetary nuclear civil war derails the Merlin Plan, either by ending civilization on Poictesme entirely, or at least weakening it sufficiently to enable an invasion by the "possible aggressor planets" mentioned by Merlin. Assuming that Poictesme *is* conquered, at least temporarily, that would again parallel Terminus, which is conquered by the Mule, and is part of his "Union of Worlds" for about ten years.¹⁸²

I therefore conclude that the references in *The Cosmic Computer* to dueling, factional battles in Storisende, global anarchy and the use of nuclear weapons, are foreshadowings of similar yet greater events in the planet's future. And the deduction that 'a single bullet' from a duel derails the Merlin Plan parallels "a single mutant" derailing the Seldon Plan. If this is indeed what Piper intended, it's an entirely logical change on his part, given his great love of firearms, and complete lack of mutants.

Yet despite the fact that both authors' secret Plans fail, we find that subsequently,

27. Both the Seldon Plan and the Merlin Plan are Rescued

a) *Rescue of the Seldon Plan*

In Asimov, the Seldon Plan is rescued, with great effort and sacrifice, by the Second Foundation. The Mule is lured into a trap on Rossem and emotionally readjusted by the First Speaker, after which his conquest of the Galaxy comes to a halt.¹⁸³ A few years later the Mule, mentally powerful but physically weak, dies, and his Union of Worlds falls apart. The First Foundation regains its independence. Some years later, a new warlord of Kalgan, Lord Stettin, is maneuvered into attacking the First Foundation. The Foundation is victorious, and this restores its confidence. As related by Second Foundationers, "[T]he purpose of the Kalganian War...[was] To show the Foundation that they could beat a physical enemy—to wipe out the damage done to their self-esteem and self-assuredness by the Mule."¹⁸⁴

But that's not enough to get the Seldon Plan *completely* back on track. Very soon after defeating Kalgan, Terminus is maneuvered into 'discovering' and 'destroying' the Second Foundation itself. This restores the First Foundation's element of normal initiative, or blind striving. "Essentially, it was necessary for the men of the First Foundation to be thoroughly convinced that they had located *and destroyed* the Second Foundation. In that way, there would be reversion to the intended original. To all intents, Terminus would once again know nothing about us; include us in none of their calculations. *We are hidden once more, and safe*—at the cost of fifty men."¹⁸⁵ The sacrifice of these "fifty martyrs" ensures that the Second Galactic Empire will rise after all. "The First Speaker...stood before the window, looking up at the incredible blaze of the firmament; at the huge Galaxy that was now safe forever."¹⁸⁶

b) *Rescue of the Merlin Plan*

Since the Seldon Plan is rescued in Asimov, the Merlin Plan should be rescued in Piper. And though Beam again does not make it explicit, this actually seems to be the case. Because even though the Merlin Plan fails, a Second Universal State (the First Galactic Empire), is established almost exactly one thousand years after Merlin predicts the end of the First Universal State (the Second Terran Federation). A close parallel of the Second Galactic Empire, which, even though the Seldon Plan fails, is nevertheless established right on schedule a thousand years after Seldon predicts the end of the First Galactic Empire.

So if the Merlin Plan is rescued, how does this occur?

Probably with great effort and sacrifice, led by the Cosmic Computer itself. We've deduced that Poictesme is seriously damaged in, and possibly conquered after, a nuclear civil war, and we know that Merlin is physically transferred to Gilgamesh. But since Merlin is a parallel of the Second Foundation, the enemy forces probably believe that *the Cosmic Computer has been destroyed*. Perhaps much as Conn Maxwell suggests in another one of his lies. "Listen, I have it...Merlin was a space station a few thousand miles off-planet; there was a crew of operators aboard, and they communicated with Force Command by radio. When the War ended, they took it outside the system and shot off a planetbuster inside her. No more Merlin. How would that be?"¹⁸⁷

In order for Merlin 'to be reaccepted', after its faked destruction the robot god presents itself in the guise of a brand-new god, Yah the Almighty, and formulates a new religion to regenerate Terro-Humanity. At this time, the inhabitants of Gilgamesh are in a period of barbarism—Piper doesn't specify how far their civilization falls, but one would guess to an early Medieval-parallel Dark Age—so the renewed Merlin Plan probably begins by 'regenerating' the planet Merlin is now on.

Once the religion of Yah is (either peacefully or forcefully) established among some tribe or nation on Gilgamesh, its adherents are supplied with more advanced weapons. Some are undoubtedly brought by the exiled Poictesmeans, but others are produced or redeveloped with the knowledge in Merlin's memory bank. Fired by religious zeal and superior equipment, these Yah-worshippers (or new Merlinolators) begin converting and/or conquering their neighbors; paralleling Medieval religious movements such as the conversion of northern and eastern Europe to Christianity, and the Islamic conquest of Mesopotamia (Gilgamesh is a Babylonian deity), Persia, North Africa, much of southern Europe and western Asia.

Aided also by Merlin's ability to predict mass human behavior with absolute accuracy, his followers politically out-manuever and militarily defeat their planetary opponents time and again. After many years, perhaps many decades, the whole planet is conquered and/or converted by the fanatical adherents of

Yah. By this time, the Gilgameshers have probably advanced to an industrial level of society. They then begin the recovery of space flight, and finally hyperdrive.

This deduced process would then be a larger-scale repeat of the Maxwell Plan, which restored planetary prosperity to Poictesme, and actually recovered the use of hyperdrive.

In *Space Viking*, Prince Trask muses that “Perhaps Gilgamesh deserved more credit; its people had undergone two centuries of darkness and pulled themselves out of it by their bootstraps. They had recovered all the old techniques, up to and including the hyperdrive.”¹⁸⁸

Notice Beam’s indefinite ‘perhaps’. Perhaps the Gilgameshers deserve more credit, *but perhaps they don’t*. Gilgamesh would appear to be an anomaly, because it is *the only planet that entirely recivilizes itself*. (Poictesme doesn’t count, because at the time of the Maxwell Plan, the planet is already civilized, save for not having its own spaceships.) This seems to have been a deliberate clue left by Piper that the planet is special in some way. Because when we take into account the unpublished fact that Merlin is on Gilgamesh, plus the known fact that its memory bank contains all human knowledge, the recivilizing of Gilgamesh, up to and including the hyperdrive, is no longer so remarkable.

Once Merlin, or Yah, helps the Gilgameshers entirely recivilize, he uses them as his agents for recovering the main goal of the Merlin Plan, the creation of a Second Universal State. The nuclear destruction and/or conquest of Poictesme means that another planet must be chosen as its physical foundation. But this has to be one of the planets “that would keep enough of the old [Federation’s] civilization to serve, in five or so centuries, as the nucleus for a new one.” Out of the 500 worlds ruled from Terra, only a few remain civilized after the Fall of the Federation. At the time of *Space Viking* eight centuries later, “There aren’t a dozen and a half planets in the Old Federation that still have hyperdrive, and they’re all civilized. That’s if ‘civilized’ is what Gilgamesh is”.¹⁸⁹ One of these roughly 16 planets is Marduk, and later in the novel we learn that the Gilgameshers are surreptitiously aiding the Mardukans. Crown Prince Edvard tells Prince Trask, “There’s a large colony of them here [on Marduk]. You have a few on Tanith, haven’t you? Well, anything one Gilgamesher knows, they all find out, and *ours are cooperative with Naval Intelligence*.”¹⁹⁰ Five hundred years after that, in “A Slave is a Slave”, we are informed that “Marduk, [is] where the Empire had begun.”¹⁹¹

The obvious conclusion is that the Gilgameshers—behind the scenes and on Merlin/Yah’s orders—are acting to help Marduk set up the First Galactic Empire, Piper’s Second Universal State. And even though, due to its two centuries of barbarism, the *culture* of Gilgamesh is now markedly different from that of the Old Federation, Gilgamesh possesses Merlin, which was its greatest scientific achievement, and whose memory bank retains all of the Federation’s knowledge. As we’ve seen, this is used to recivilize the Gilgameshers, meaning that their planet *has become* one of the few planets “that would keep enough of the old civilization to serve, in five or so centuries, as the nucleus for a new one”. Marduk and Gilgamesh are therefore the dual nuclei, or ‘two foundations’, of the Second Universal State. (See 29.)

28. Both New Religions Recivilize Barbarians

Both entirely new religions are used to recivilize barbarian worlds.

a) Using Religion to Recivilize

Merlin’s use of the religion of “Yah the Almighty” to recivilize and control Gilgamesh after the fall of the Terran Federation parallels how the religion of the Galactic Spirit is used to recivilize and control the Four Kingdoms surrounding Terminus, after the Galactic Empire begins breaking up. On a smaller scale, of course, reflecting again the smaller size of the Federation compared to the Empire. Gilgamesh is a single planet, while the Kingdom of Anacreon alone, for example, “embraced twenty-five stellar systems, six of which included more than one habitable world.” But the deduction that recivilizing Gilgamesh takes several decades to several centuries parallels the recivilizing of Anacreon. Because near the end of his three-decade administration, Mayor Salvor Hardin discovers that “Even in thirty years, only the capital world had been powered. The outer provinces still possessed vast stretches where atomic power had not yet been re-introduced.”¹⁹²

On Anacreon itself, the Galactic Spirit’s priests are in charge of all technological installations, such as power plants and spaceships. When Prince Wienis launches an unprovoked war on the Foundation, Anacreon is placed “under the interdict”, meaning a shutoff of all technology. “There’s not a light burning,

except in the temples. There's not a drop of water running, except in the temples. On the wintry half of the planet, there's not a calorie of heat, except in the temples. The hospitals are taking in no more patients. The power plants have shut down. All ships are grounded.”¹⁹³ Even the huge flagship *Wienis*, en route to Terminus, is “cursed” by its priest-attendant, Theo Aporat; this involves the vessel being remotely deactivated via “the ultrawave relay.”¹⁹⁴

Asimov's words on this process among the Four Kingdoms therefore seem applicable to Gilgamesh. First, Lewis Bort says that “Religion is one of the great civilizing influences of history”.¹⁹⁵ Quite true, and despite Piper's disdain for organized religion, he has Merlin use religion to recivilize Gilgamesh, and then help set up the Second Universal State—thereby playing a ‘great civilizing influence’ on the Terro-Human Future History itself! Second, after the *Wienis* is neutralized, Asimov says that “it is the chief characteristic of the religion of science, that it works, and that such curses as that of Aporat are really deadly.”¹⁹⁶ Although unstated by Beam, scientific curses by the priests of Yah would also work, probably to terrify and overawe the barbarous Gilgameshers into obedience, after Merlin arrives on the planet.

Moreover, just as a priest of the Galactic Spirit is stationed on the *Wienis*, hyperships of Gilgamesh include a priest of Yah as one of the senior officers. “After their ship had gotten into orbit [around Tanith], three of them came down to do business. The captain and his exec. wore long coats, almost knee-length, buttoned to the throat, and small white caps like forage-caps; *the third, one of their priests*, wore a robe with a cowl, and the symbol of their religion, a blue triangle in a white circle, on his breast.” His title is “priest-supercargo”, but he must also be in charge of the crew's spiritual needs, like Theo Aporat.¹⁹⁷

b) Yah and Yat-Zar: A Techno-Judaic Connection

Now for a brief aside. Apart from Asimov-style curses, the religion of science would be equally effective in performing their opposite, miracles, and getting the barbarous Gilgameshers to believe in the cosmic deity Yah the Almighty probably includes miracles made possible by Merlin's advanced knowledge and science.

This extrapolation is supported by Piper's paratimers. On the medieval Aryan-Transpacific Sector, for example, First Level paratimers scientifically perform what local priests call “A miracle!” This involves the disappearance of Calvin Morrison's police uniform and revolver from the temple of Dralm, which in reality is simply transposed back to his original timeline in order to explain his disappearance there, while at the same time protecting the Paratime Secret.¹⁹⁸

The actual process by which Merlin converts the barbaric Gilgameshers to the faith of Yah may well parallel how paratimers mask their mining operations on the primitive Proto-Aryan Sector. This involves employing a number of scientific miracles in order to place their proxies in positions of religious authority, as well as conceal their incoming and outgoing transpositions. The god in this case is Yat-Zar, who, like Yah-Merlin, enables his high priests to predict future events with absolute accuracy.

A few First Level paratimers would transpose to a selected timeline and abduct an upper-priest of Yat-Zar, preferably the high priest of the temple at Yoldav or Zurb. He would be drugged and transposed to the First Level, where he would receive hypnotic indoctrination and, while unconscious, have an operation performed on his ears which would enable him to hear sounds well above the normal audible range. He would be able to hear the shrill sonar-cries of bats, for instance, and, more important, he would be able to hear voices when the speaker used an audio-frequency step-up phone. He would also receive a memory-obliteration from the moment of his abduction, and a set of pseudo-memories of a visit to the Heaven of Yat-Zar, on the other side of the sky. Then he would be returned to his own time-line and left on a mountain-top far from his temple, where an unknown peasant, leading a donkey, would always find him, return him to the temple, and then vanish inexplicably.

Then the priest would begin hearing voices, usually while serving at the altar. *They would warn of future events, which would always come to pass exactly as foretold.* Or they might bring tidings of things happening at a distance, the news of which would not arrive by normal means for days or even weeks. Before long, the holy man, who had been carried alive to the Heaven of Yat-Zar *would acquire a most awesome reputation as a prophet*, and would speedily rise to the very top of the priestly hierarchy.¹⁹⁹

These ‘prophets of Yat-Zar’ on various timelines could then be paralleled by a ‘Prophet of Yah’ on Gilgamesh. A successor of the phony ‘Prophet of Merlin’ on Poictesme, Carl Leibert; but in Gilgamesh's case, this person would be a real local clergyman, subordinate to the actual handlers of Merlin. Given the

Asimov model and Yah's connection with Yat-Zar, his title may actually be High Priest, paralleling High Priest Poly Verisof and "Ghullam, the high priest" in "Temple Trouble".

To protect the all-important Paratime Secret, on Proto-Aryan the paratimers have built high-tech facilities hidden behind the altars of Yat-Zar, and their transposition domes are concealed in chambers beneath its temples.²⁰⁰ Similar care is found on Poictesme, where Force Command Duplicate was secretly built within a mesa on Poictesme, to protect the all-important Merlin. Thus, one can easily envision that the people who bring the Cosmic Computer to Gilgamesh construct secret facilities behind the altars of Yah, and beneath his temples. Merlin himself is undoubtedly hidden once again, probably inside another rocky prominence. From here the commands of 'Yah' would emanate, making this his 'holy mountain', paralleling Mount Sinai where the Ten Commandments of Yahweh were revealed.²⁰¹

Paratime technology is far superior to that of the early Terro-Human Future History, yet similar techniques could be performed on Gilgamesh. For instance, the High Priests of Yah could be surgically implanted with ultrasonic hearing aids, perhaps improved versions of the Fuzzyphones of Zarathustra.²⁰² And mind-probes could be employed to hypnotically implant false memories, such as an astral voyage to the Heaven of Yah, beyond the Universe. In this way, the High Priests would not only believe in Yah, they would be able to 'hear' his commandments. These high priests would therefore act as local proxies of the real rulers; the operators of Merlin, who translate his computations into accurate predictions "of future events, which would always come to pass exactly as foretold." These operators would also be aware of "tidings of things happening at a distance", either through aerial and orbital reconnaissance, or radar and microray detection. These predictions and tidings would be transmitted by ultrasonic frequencies via a cleverly concealed aerial, like the "buried aerial—or wouldn't one say, subterral?" which was used to communicate with Merlin on Poictesme.²⁰³ This buried aerial would connect Yah's holy mountain to his current High Priest, who would "acquire a most awesome reputation as a prophet" among the local, uncivilized Gilgameshers.

Even the 'miracles' of contragravity and advanced weapons could be used to convert the heathen Gilgameshers to the faith of Yah. Because in "Temple Trouble", the Paratime Police fight Yat-Zar's enemies (a rival group of paratimers with their own Proto-Aryan god, Muz-Azin) using antigravity and First Level weapons, but without compromising the Paratime Secret. The weapons include "ultrasonic paralyzers", which when used, make the locals "sure that Yat-Zar was striking sinners dead left and right."²⁰⁴ The Paratime Police also modify an idol of Yat-Zar, adding "antigrav units and some sort of propulsion units, and a loud-speaker, and remote control." This allows Yat-Zar himself to come out of his temple, booming his 'divine' orders, and leading his priests in a victorious advance against those of Muz-Azin, whose high priest is killed, and idol is destroyed, by Verkan Vall's First Level sidearms; a needler and a blaster.²⁰⁵

Concealed contragravity, loudspeakers and weapons could likewise make an image of Yah come to life, denounce his enemies on Gilgamesh and strike them dead in mysterious and dreadful fashion.

c) Differences I: Christianity versus Judaism

The differences here are again interesting. Piper was raised as a Christian, but his post-Federation Gilgameshers and their religion of Yah the Almighty are mainly modeled on the Jews. The symbol of the Gilgameshers' religion is blue on white, reflecting the blue on white flag of Israel, and the 'blue triangle' itself is a half Star of David. Although not specified, the Gilgamesh priest-supercargo's robe may also be blue, staying true to the color scheme.

These elements are therefore a reversal of Asimov, who was raised a Jew, but whose post-Imperial religion is mainly modeled on Christianity. Theo Aporat wears a "robe" with a "hem", to which Anacreonian soldiers cling in terror at his cursing of the flagship, while High Priest Poly Verisof wears a "crimson robe".²⁰⁶ As High Priest, Verisof parallels the Pope, and Asimov was probably aware that "Throughout the Middle Ages red was the color of the Catholic Church."²⁰⁷ Red is still seen in the State Arms of Vatican City, which consist of the gold and silver keys of St. Peter crossed beneath the three-tiered Papal tiara, on a crimson field.²⁰⁸

d) Differences II: "Regular Defense in Depth"

But Beam's changes may include another improvement on Asimov. The Foundation's religion of the Galactic Spirit is open to anyone; its inclusive nature (paralleling that of Christianity) is used to subvert the

people of other planets, like Askone and the Four Kingdoms, to Foundation control. However, Judaism is not a proselytizing faith, and Gilgamesh's religion of Almighty Yah is not inclusive but exclusive; it keeps people away. "Aside from their propensity for sharp trading, their bigoted refusal to regard anyone not of their creed as more than half human, and the maze of dietary and other taboos in which they hid from social contact with others, made them generally disliked."²⁰⁹

This makes perfect sense, because Piper combined his Second Foundation (Merlin) with the religion of the First Foundation (Galactic Spirit). From Merlin's perspective, keeping its continued existence and subtle historical manipulations secret is paramount, so assuming an alias (Yah) and surrounding itself with a religion *that repels offworlders*, rather than welcoming them, would provide a double layer of protection. In fact, since Merlin formulates this entirely new religion himself, it was probably *designed* to keep outsiders away. Merlin deliberately made his worshippers repellant. The social and dietary taboos he imposed on them keep contact with offworlders to a minimum, while their "absurd potpourri" of a religion, combined with self-righteous bigotry—like those Jews who seriously consider themselves the Chosen People, the Gilgameshers' attitude may originate because they are 'chosen' by Yah/Merlin for the 'divine' mission of setting up the new Universal State—keeps outsiders from wanting to be around them, much less convert to their faith. As for visiting a whole planet of such people, why would anyone want to?

This brings us to the third layer of protection; Merlin's followers. Disliking a group of people, such as Jews or Gilgameshers, can lead to violence against them. Similar to the Israelis, the Gilgameshers "had religious objections to violence, though they kept these within sensible limits, and were able and willing to fight with fanatical ferocity in defense of their home planet. About a century before, there had been a five-ship Viking raid on Gilgamesh; one ship had returned and had been sold for scrap after reaching a friendly base."²¹⁰

The Israelis are peaceful, yet have similarly trounced their foes in lopsided fashion when attacked. But this parallel also means that Gilgamesh follows Asimov's doctrine that "Violence is the last refuge of the incompetent."²¹¹ The Gilgameshers employ it only as a last resort—just like the Foundation, which never wages a single war of aggression. Terminus fights only when attacked, whether by the Korellian Republic, the Galactic Empire, the Mule or Kalgan. Unlike Israel or Terminus, however, Gilgamesh possesses Merlin, which "can handle large-group behavior with absolute accuracy." By the standards seen in the early part of *Space Viking*, five ships is a fairly large group. 'Yah' may therefore have predicted the five-ship Space Viking raid, or at least its high probability. Thus, the planetary defenders of Gilgamesh are not only well-armed and fanatical; they're ready for trouble at just the right times.

In sum, Merlin's continued existence is protected by an alias (and probably a general belief that it was destroyed either on, or while trying to leave, Poictesme), his worshippers are protected from contact with outsiders by a repugnant theo-socialist system and its taboos, and their planet is protected from physical violence by (literally) awesome intelligence and a fanatical defense. Merlin is therefore "hidden once more, and safe", just like the Second Foundation.

Incidentally, Merlin's deduced triple layer of protection is an example of "defense-in-depth", an element Piper included in several stories. *The Cosmic Computer* itself mentions secret duplicate and triplicate Federation installations that were built on Poictesme, in case an Alliance space attack wiped out the primary facilities.²¹² The early THFH story "The Edge of the Knife" reveals that, for a similar reason, the United States built secret duplicate and triplicate rocketports to service the Lunar fortress, and these "saved the country" after a Soviet nuclear first strike in WWIII.²¹³ And in *Lord Kalvan of Otherwhen*, Calvin Morrison creates an 'outer' and 'inner' cover story to protect his own crosstime origin, but Verkan Vall admits that they also serve to protect the all-important Paratime Secret of intertemporal travel.²¹⁴

The defense-in-depth of Merlin/Yah is therefore another improvement on Asimov, whose Second Foundation merely 'hides' among the Imperials on Trantor, and after the Great Sack continue hiding among the peasant survivors. No alias, no well-armed and fanatical defenders; just a single layer of protection. One might argue that the ambiguous statement by Hari Seldon about the Second Foundation being located "at the other end of the Galaxy, at Star's End" is a second layer—the Galaxy is so huge, they could be anywhere—but even that phrase was a clue to the real answer! (See **Found at the Same 'End' of the Galaxy, below**.) Furthermore, as First Speaker Preem Palver admits at the end of the series, there were a number of other "flaws in our secrecy", which in fact amounted to "gaping holes".²¹⁵ This is not an optimum situation when the long-term fate of all humanity is at stake.

29. Two Foundation Planets

Both authors' Second Universal States are therefore founded by two planets; one concentrating on physical prowess, the other on psychohistoric manipulation.

a) *The First Foundations*

In the Seldon Plan, Terminus becomes the "Encyclopedia Foundation Number One".²¹⁶ It is sometimes referred to as "the First Foundation", but since the Second Foundation is hidden (and doesn't directly appear until the third book), more often as just "the Foundation".²¹⁷ Terminus is a world of physical science that will reunify the Galaxy into the Second Galactic Empire. As stated by one Second Founder, "[T]he First Foundation supplies the physical framework of a single political unit".²¹⁸

As we've seen, Terminus is paralleled by Poictesme. In the Merlin Plan, Poictesme becomes the initial nucleus—or 'first foundation'—of Piper's Second Universal State. By creating a new Federation, it is implied that Poictesme will physically reunify the (known) Galaxy. The Plan will begin with "Revival of interstellar communications and trade", and will follow with "*expeditions, conquest and reeducation of natives*". After the fall of the Terran Federation, Poictesme will therefore be among the few planets able to "keep enough of the old civilization to serve...as a nucleus for a new" Universal State.

Officially, this state will presumably be known as the 'Poictesmean Federation', at least at first. Once it reunifies all known inhabited planets, it could be renamed the Third Terran Federation, or (since Terra is destroyed in the Interstellar Wars) the Interstellar Federation.

b) *The Second Foundations*

At the end of the Foundation series, and after the Seldon Plan has been saved, it is revealed that Trantor is the location of the Second Foundation. It is a world of mental science; its practitioners have been the guardians of the Seldon Plan and, because of experience gained over the centuries, have surpassed Seldon himself in the science of psychohistory. As the First Speaker puts it, "The Seldon Plan is neither complete nor correct. Instead, it is merely the best that could be done at the time. Over a dozen generations of men have pored over these equations, worked at them, taken them apart to the last decimal place, and put them together again. They've done more than that. They've watched nearly four hundred years pass and against the predictions and equations, they've checked reality, and they have learned. They have learned more than Seldon ever knew, and if with the accumulated knowledge of the centuries we could repeat Seldon's work, we could do a better job."²¹⁹

Eventually, the psychohistorians will move in and become the rulers of the Second Galactic Empire. The First Speaker's student says that "[T]he Second Foundation supplies the mental framework of a ready-made ruling class."²²⁰

In Piper, the failure of the Merlin Plan means that Poictesme does not create a new Federation; and as we saw in section 13, instead of taking 500 years it will now require a thousand to accomplish that goal. It can therefore be said that 'the Merlin Plan was neither complete nor correct. Instead, it was merely the best that could be done at the time.' Since Beam says that "Marduk [is] where the Empire had begun", Marduk appears to become the new nucleus—or 'second foundation'—of Piper's Second Universal State, which will now be known as the First Galactic Empire.

However, Marduk is also a world of physical science, which politically reunifies Terro-Humanity. At its greatest extent, the First Galactic Empire founded by Marduk is almost three times the size of the Old Federation (1,365 planets versus 500),²²¹ so it is a 'new and greater Empire', echoing the "new and greater [Second Galactic] Empire" of the Foundation series.

Marduk is therefore Poictesme's *replacement* as the physical or first foundation. And it is interesting that, just as Poictesme is on the periphery of the Terran Federation, Marduk too is not far from the edge. John Carr says that "We know Marduk is close to the frontier of the Old Federation; it is only five hundred light-years from Tanith, which was one of the last planets to be colonized by the Federation."²²²

Since Marduk is the 'new Terminus', then paralleling Asimov, there should be another planet working behind the scenes to keep the Merlin Plan on track. A precise parallel would make this either Poictesme (Merlin remains on the destroyed planet as the Second Foundation remains on devastated Trantor) or Terra (Merlin relocates to the devastated capital of the Old Federation as the Second Foundation is

located on the devastated capital of the old Empire).

As we've seen, however, Piper revealed to Jerry Pournelle that this planet is actually Gilgamesh. Thus, Gilgamesh is the psychohistoric nucleus—the true 'second foundation'—of the planned-for Second Universal State.

c) *Third Foundations*

This means that in Piper, there is a 'third' foundation, which actually parallels the Second Foundation. The group of men on Gilgamesh that operate Merlin and translate its predictions parallel the psycho-historians on Trantor, who use psychological mathematics to predict the future of humanity. This hidden group of men are undoubtedly the professional descendants of Merlin's operators in *The Cosmic Computer*; most notably Conn Maxwell, the computer expert, and General Shanlee, the military expert and nominal head of the project.²²³

Notice that **in both author's works, both foundations originate on the same planet, but are later separated.** In Asimov, the Seldon Project is located on Trantor, where it plans and organizes the First and Second Foundations, and in Piper, Poictesme is the initial nucleus, or 'first foundation', of a new Federation, which is planned and organized by Project Merlin (his 'second foundation'), also located on Poictesme.

The difference is that in Asimov, the First Foundation leaves for Terminus while the Second remains on Trantor; but in Piper, both foundations leave Poictesme. After the failure of the Merlin Plan, Marduk becomes the new physical nucleus of the coming universal state (the new first foundation), while Project Merlin relocates from Poictesme to Gilgamesh (the new second foundation).

A comparison chart may help show the parallels.

	Asimov	Piper
First Foundation (Physical Nucleus)	Trantor, then Terminus	Poictesme, then Marduk
Second Foundation (Psychohistoric Nucleus)	Trantor	Poictesme, then Gilgamesh

30. Parallel Independent Traders and Combines

In both Future Histories, a semi-independent group of interstellar traders advance the goals of the Plan by economically supporting the 'foundation' planet. The foundation planet also sees the rise of merchant princes who control a web of interlocking companies.

In **Asimov**, the first group is the Independent Traders. *"Traders—...and constantly in advance of the political hegemony of the Foundation were the Traders, reaching out tenuous fingerholds through the tremendous distances of the Periphery. Months or years might pass between landings on Terminus ...Through it all they forged an empire more enduring than the pseudo-religious despotism of the Four Kingdoms..."*²²⁴

This economic empire contributes a great flow of money to Terminus. Master Traders like Hober Mallow only get to keep "Fifty percent of the profit" they make "by hidebound contract with the Foundation. The other half goes to the government at the end of the year when all good citizens pay their income tax."²²⁵ The burgeoning prosperity then leads to the rise of the Merchant Princes—beginning with Mallow himself, who uses his wealth to get elected Mayor of Terminus, as well as solve the third Seldon Crisis.²²⁶

Unfortunately, over time all this concentration of wealth on Terminus produces corruption. The Merchant Princes become a closely interlocked group known as "the Combines". Trader Lathan Devers says "There's fat fellows back there [on Terminus]...that sit home and collect my year's income every minute—out of skimmings from me and more like me."²²⁷ And notwithstanding Devers' contribution to the Foundation's wartime victory over the Galactic Empire, his outspoken criticism of the Combines ends with his death "in the slave mines".²²⁸

Also, under the Combines the Mayor of Terminus becomes a figurehead. In a secret meeting, one of the Merchant Princes says that "The government is soft...the Mayor is an idiot." Sennett Forell replies, "I trust the gentleman who last spoke was speaking through habit only. We can afford to remember here that we are the Government."²²⁹

Piper's parallel of the Independent Traders and Combines appear in two separate stories (and eras), because his 'first foundation' is located on two successive planets.

'Combines'. Beam actually reverses Asimov, in that his version of the Combines appears first, in *The Cosmic Computer*. It consists of the large number of closely interlocked companies founded by Rodney Maxwell and his growing list of associates, as economic activity on Poictesme and then the Trisystem expands. The initial chartering of Litchfield Exploration & Salvage is followed by a partnership with Transcontinent & Overseas in the creation of Alpha-Interplanetary; then come Mainland Medical Materials, Trisystem Investments, Koshchei Exploitation & Development and Trisystem & Interstellar Spacelines, plus a couple of competitor companies chartered for the planets Jorgen and Janicot.

Since all the investors receive shares and/or titles in each new Maxwell company, a complex web connecting them all is created. Conn reflects that "It was a pity there really wasn't a Merlin. If this kept on nothing else would be able to figure out who owned how much stock in what."²³⁰

In another change from Asimov, Piper adds some realistic human confusion that should result from all these interlocked or 'combined' companies. "The Jorgen and Janicot Companies wanted to buy ships from Koshchei Exploitation & Development. The Alpha-Interplanetary director, who was also a vice-president of Transcontinent & Overseas, opposed that; another director of A-I, who was also board chairman of Koshchei Exploitation & Development, wanted to sell ships to anybody who had the price, the Transcontinent & Overseas man was calling him a traitor to the company, and one of the stockbrokers, who was also a vice-president of Trisystem Investments and a director of Trisystem & Interstellar Spacelines, was wanting to know which company."

Beam does hint at the corruption angle, but in his case, it stems from all these companies being combined, rather than the leadership exploiting independent space-merchants. "And a banker who was a stockholder in all the companies was shouting that they were all a gang of crooks, and J. Fitzwilliam Sterber was declaring that anybody who called him a crook could continue the discussion through seconds."²³¹

The success of the Maxwell Plan means that all the investors will "be making millions out of this by this time next year", thereby creating a group of rich 'merchant princes', just like in Asimov. As the primary organizer of all these companies or 'combines', Rodney Maxwell should become the first ruling merchant prince of Poictesme, paralleling Hober Mallow. And in fact, at the end of the novel the planetary business leaders *want* him to become the next President of Poictesme. But in one of Beam's rule-from-behind situations, Rodney hastily nominates the somewhat inept Kurt Fawzi for the job.²³² In doing so, he parallels Sennet Forell and the other Merchant Princes, who are the real power behind the figurehead Mayor. (However, 'Mayor' Fawzi taking over Poictesme is yet another Asimov parallel; see section 32.)

Thus, just as the Merchant Princes of Terminus "can afford to remember here that we are the Government", the business leaders of Poictesme become the real planetary rulers. This is actually foreshadowed early in Beam's novel. "We get a [merchant] ship out to Koshchei, and the next thing you know we'll be the Planetary Government."²³³

Piper's 'Combines' contribute to the Maxwell Plan by restoring planetary prosperity, and thus also contribute to the Merlin Plan, by providing Poictesme with the economic base necessary to create the Second Universal State. Indeed, Beam suggests that the next step will be the appearance of his version of the Independent Traders, as the Terran Federation collapses and Poictesme begins to fill the politico-economic vacuum. "Revival of interstellar communications *and trade*; expeditions; conquest and re-education of natives..." Trade first, then 'political hegemony', as in Asimov.

'Independent Traders'. As we've seen, however, the Merlin Plan fails on Poictesme, and is secretly recalculated to support Marduk, the new physical nucleus. So Piper's parallel of the Independent Traders should appear later, in connection with Marduk. And in *Space Viking*, we find the Gilgameshers. "They didn't raid; they traded... *Their ships went everywhere to trade*, and wherever they traded a few of them

usually settled, and where they settled they made money, sending most of it home.”²³⁴ The planet Gilgamesh and its ubiquitous trade ships are independent from, but associated with, Marduk, the new ‘first foundation’ planet; just as the Independent Traders are associated with the First Foundation, Terminus, but operate beyond the pale of actual Foundation control. In supporting Marduk, the Gilgameshers are secretly advancing the (new or revised) Merlin Plan, just as the Independent Traders help advance the Seldon Plan.

The comparison of Gilgameshers with Independent Traders reveals a couple of differences between the two authors. First, Asimov’s Independent Traders are loyal to the First Foundation, and are in the vanguard of its expansion; but even though Piper’s traders support Marduk, his ‘first foundation’, they are actually loyal to Gilgamesh, his ‘second foundation’. Marduk has its own trade ships and planets, separate from Gilgamesh.

Second, Asimov’s Independent Traders get to keep “Fifty percent of the profit” they make, but Piper’s interstellar traders, the Gilgameshers, send “most of” the money they make home. They therefore get to keep *less* than 50% of the profits they make from trade. Their contract with the home planet presumably stipulates a 60-40 split, or perhaps 70-30. This lopsided balance should contribute a great flow of money to Gilgamesh—and Merlin.

However, since “anything one Gilgamesher knows, they all find out”, then along with the money, they also send information, *intelligence*, about all the planets they have settled on—which Piper says are “everywhere”, meaning all over the Old Federation—home to Gilgamesh. This makes perfect sense, since it would provide Merlin with the data he needs to keep his memory bank full of “all human knowledge”, which in turn would allow the Cosmic Computer to keep predicting future events “with absolute accuracy”. The trade tentacles—and spy network—of Merlin are everywhere.²³⁵

The deduced great flow of money to Gilgamesh would then probably be used both to maintain the planet’s formidable defenses (keeping Merlin safe) as well as maintain and support the trade fleets in space (through which Merlin gets the information critical to his primary function). ‘Yah’ may not really be Almighty (omnipotent), but he is, and must remain, All-Knowing (omniscient).

But he isn’t, at least not yet. Because Lucas Trask says that “He had first heard of Gilgameshers...on Gram, from Harkaman, Karffard, Van Larch and the others.” Trask never heard about them while growing up on Gram, nor even while spending “a few years at the University of Camelot, on Excalibur.” And the group of men he hears about the Gilgameshers from are all Space Vikings, who have raided in the Old Federation.²³⁶

Thus, it appears that the Gilgameshers have not yet penetrated the Sword-World cluster. This means that Merlin probably cannot include them in its predictions, at least accurately, since the information it possesses about them should be extremely limited. The new or ‘second’ Merlin Plan therefore seems to suffer from the same deficiency as the first. Just like the Seldon Plan, it “is neither complete nor correct. Instead, it is merely the best that could be done at the time.”

One seemingly major difference is that Gilgamesh is a single trading planet, while Asimov included “twenty-seven independent Trading worlds, united only by their distrust of the mother planet of the Foundation”.²³⁷ Possibly another reflection of the difference in scale between the post-Federation space centered around Sol and the post-Empire Galaxy.

However, in *Space Viking* Piper invested a lot of ink on the revival of interstellar trade. Tanith gathers around itself a small group of “trade planets”, similar to the fourteen trade planets of Marduk²³⁸ and, presumably, the trade planets of the other civilized worlds. Since all of these networks appear to be separate from each other, the planets at their center, like Tanith and Marduk, Odin and Osiris, can therefore be considered ‘independent trading worlds’. With the addition of the newly-civilized Tanith, there should be 17 or 18 of these interstellar-trading worlds, not too different from the 27 in Asimov.

And the number is even closer. Because two of Tanith’s trade planets are Beowulf and Amaterasu, and by trading with Tanith, Beowulf and Amaterasu soon redevelop hyperships, which enable them to join the new interstellar commercial network in their own right. They become ‘independent trading worlds’, too.

In addition, there is a group of Space Viking base planets. Although these are as much concerned with raiding as trading, most of them are independent. Unlike Prince Trask of Tanith and Prince Viktor of

Xochitl, who are vassals of King Angus of Gram and King Konrad of Haulteclere, the base planets owe no allegiance to any Sword-World monarch, and have therefore not been bestowed with titles of nobility. These 'independent trading (and raiding) worlds' include Hoth (ruled by the Everrards), Jagannath (Nicky Gratham and family), Dagon (Fedrig Barragon and sons) and Nergal (Tobbin).²³⁹

Adding the four named independent Viking base planets to the 19 or 20 civilized planets brings the total to twenty-four. Thus, the twenty-four independent trading planets at the end of *Space Viking*, just prior to the creation of the League of Civilized Worlds, are very close to Asimov's "twenty-seven independent Trading worlds".

Moreover, it is interesting that the League of Civilized Worlds starts out with *four* planets. "And there would be the treaty—Tanith, Marduk, Beowulf, Amaterasu; eventually, treaties with the other civilized planets."²⁴⁰ This could be a reflection of the Four Kingdoms surrounding Terminus. Terminus and the Four Kingdoms are the core from which the Second Galactic Empire grows, and Piper's four civilized planets (plus Gilgamesh behind the scenes) are the core of the League of Civilized Worlds, which eventually grows into his Second Universal State, the First Galactic Empire.

Incidentally, the League of Civilized Worlds appears to be modeled on the Hanseatic League of northern Germany. So Asimov's independent Trading worlds, located on the periphery of the Galaxy, may also be a parallel of the Hanseatic League, which was located on (and beyond) the periphery of the old Roman Empire. (See **Appendix 1.**)

We can even add that, just as Piper's 'second foundation' (Gilgamesh) is closely connected by trade to his 'first foundation' (Marduk), Asimov connects the Second Foundation (Trantor) to the First (Terminus) by a trade mission. At the end of the Foundation series, the First Speaker of the Second Foundation, Preem Palver, poses as a merchant, a *trader*, while working to rescue the Seldon Plan. He acts as "the trading representative" of a "farm cooperative" on Trantor, "negotiating terms with the Department of Agriculture on Kalgan."²⁴¹

But the real purpose of his mission is to take Arcadia Darell to Trantor, act as her envoy in transmitting the all-important message "a circle has no end" to her father on Terminus, and along the way ensure that the First Foundation's fleet is "soaked in confidence" when facing the armada of Kalgan. A mission, incidentally, which makes him a great deal of money, just like a Gilgamesher. For after the Foundation's victory over Kalgan, "Preem Palver landed on Terminus at the height of the celebration. He found the furore distracting, but before he left the planet, he had accomplished two things", one of which was "the conclusion of an agreement whereby Palver's cooperative was to deliver twenty shiploads of certain foodstuffs per month [to Terminus] for the next year at a war price, without, thanks to the recent battle, a corresponding war risk".²⁴²

To sum up, Piper's Gilgameshers seem to combine the Second Foundation with the Independent Traders of the First Foundation. This is another improvement on Asimov, who had his Second Foundationers adopt various disguises (including Lady Callia, the mistress of Lord Stettin on Kalgan, and Pelleas Anthor the student of Kleise on Terminus) in order to manipulate events. Commerce is the lifeblood of any interstellar civilization, making it the best choice for a network of intelligence and manipulation, while at the same time providing the continual funding needed to keep the home planet well-defended, as well as to sustain the long-term effort of the secret Plan.

31. The Foundation Planets Unite, with a Central Capital

At the end of both Plans, the two foundation planets unite, and the capital moves back to the center.

a) Unification of the Foundations

Through the Seldon Plan, Terminus will physically reunify the Galaxy in a thousand years. This will of course include Trantor, where the Second Foundation is located. The psychohistorians will then reveal themselves, and move in as the ruling elite of the Second Galactic Empire. "Conditions have been so arranged and so maintained that in a millenium from its beginnings—six hundred years from now, a Second Galactic Empire will have been established in which Mankind will be ready for the leadership of Mental Science."²⁴³

In Piper, Marduk (the second 'first foundation'), presumably working under the new Merlin Plan, will physically reunify Terro-Humanity. This will of course include Poictesme (the original 'first and second foundations'), where Merlin was initially located, as well as Gilgamesh (the second 'second foundation'), where Merlin currently resides.

The difference is that in Piper, the 'psychohistorians' on Gilgamesh (the programmers of Merlin) do not become the Galaxy's ruling elite, at least not openly. Because his Galactic Empire is ruled by Emperors who are descended from the Kings of Marduk, and the Empire's capital is on Odin, not Gilgamesh.²⁴⁴ Thus, the Gilgameshers apparently continue to manipulate events from behind the scenes.

Gilgamesh is not mentioned in either of Beam's First Empire stories, "A Slave is a Slave" or "Ministry of Disturbance". In "Slave", however, "Commodore Hastings...got a baronetcy for stopping a pogrom on Anath". A pogrom is defined as "an organized massacre, esp. of Jews", which suggests that the pogrom on Anath is against Piper's Jews, the Gilgameshers. This implies they are still "generally disliked" among the Galactic populace at large. As Lucas Trask puts it, "Well, that was one thing you had to give him credit for. He wanted to run out the Gilgameshers. Everybody was in favor of that." Thus, during the First Galactic Empire, the programmers of "Yah" stay in the shadows, allowing the various Emperors to physically run the Galaxy, while they remain the hidden but actual ruling elite of Terro-Humanity.

This situation may well obtain for the Second through Fifth Galactic Empires. It seems certain in the Fifth Empire's case, because that state is run by men like "the Prince Salsavadran and the Lord Dranigrastan" (p. 240), not by Gilgameshers. Thus, the Gilgameshers may truly be Piper's version of 'the Eternal Jew'; the long-derided but never exterminated pariah-people, who nevertheless have made substantial contributions to the betterment of the whole human race. The Gilgameshers would then be an outcast people through most if not all of Beam's Future History, while their hidden cadre of leadership secretly guides Terro-Humanity through the settlement and conquest of the entire Galaxy.²⁴⁵

b) Both Capitals Move Back to the Center

Asimov does not make it explicit, but the fact that the Second Foundation will be the ruling elite implies that Trantor will become the capital of the Second Galactic Empire, just as it was of the First. The capital will therefore relocate from Terminus on the Periphery, because it would be extremely difficult, if not impossible, to rule the entire Galaxy from a planet on the edge.

This is supported by Isaac's later novel *Foundation's Edge*, where the inward movement of the capital is inevitable, but the proper time has not yet come. As the Interregnum gets close to the 500-year mark, the Foundation "held a strong economic grip on over a third of the scattered political units of the Galaxy, and influenced what it didn't control."²⁴⁶ It is the most powerful state in the Galaxy, but its capital is still on Terminus, at the extreme edge of the Milky Way. This provokes a Seldon Crisis, between those who want to keep the capital where it is, and "those who longed for the prestige-filled Interior of the Galaxy and for the aura of Imperial power". This "quasi-imperial drive to the Inner Provinces",²⁴⁷ is opposed by the current Mayor of Terminus, Harla Branno, who says it is "too soon" for that. And like her illustrious predecessors Salvor Hardin and Hober Mallow, who successfully faced their own Seldon Crises, she's right; "the shift [of the capital] to some point closer to the center of the Foundation Federation [at this time] would have...all the dire consequences that Seldon had outlined."²⁴⁸

In Piper, a parallel inward movement takes place. The first few successors of Emperor Stevan I rule the Galactic Empire from Marduk, a planet not too far from the edge of the Old Federation. But when Emperor Stevan IV ascends the throne, he "proclaimed Odin the Imperial planet and Asgard the capital city."²⁴⁹ As John Carr puts it, "But why did Stevan IV move the capital from Marduk to Odin, when both are major worlds? The most likely answer is that Odin is much closer to Terra and the other major civilized worlds."²⁵⁰

I would only add that this places Odin near the center of *all* human-inhabited worlds, similar to Trantor at the center of Asimov's human-inhabited Galaxy. Odin is one of the first extrasolar planets colonized by Terro-Humanity. As such, it should not be too far from Terra. And since Terra was the capital and center of the Old Federation, that means Odin is located 'fairly close' to the center.

Incidentally, this may connect Odin to Neotrantor. Odin is the capital of Piper's First Galactic Empire, and the successor-world of Terra, which was "*bombed back to the Stone Age*" during the Interstellar Wars.²⁵¹ And Neotrantor becomes the capital of Asimov's First Galactic Empire, after the Great Sack

brings “Total destruction” to Trantor.²⁵² Neotrantor is thus the successor-world of Trantor. And just as Odin shouldn’t be too far from Terra, Neotrantor is a mere “Two parsecs”, or six and a half light-years, from Trantor.²⁵³

c) Difference

The difference is that Trantor, the capital of the First Galactic Empire, presumably becomes the capital of the Second Galactic Empire; whereas in Piper, Terra, the capital of the First Universal State (the Terran Federation) does not become the capital of the Second Universal State (the First Galactic Empire). There would seem to be two reasons for this. First, the Second Foundation is located on Trantor, but Merlin—Piper’s ‘second foundation’—is not located on Terra. And secondly, the total destruction of Trantor in the Great Sack during Asimov’s “interstellar wars” is paralleled by Terra being “bombed back to the Stone Age” in the Interstellar Wars.

The obvious question is, why would Asimov locate the new Galactic capital on a ruined world? Because the implication is that Trantor would have to be almost completely rebuilt. Since the former capital city encompassed *the entire planet* during the First Empire, even Trantor’s partial rebuilding should require major resources, and could take decades, if not centuries, to accomplish.

Piper’s version would therefore seem to make more sense. Instead of using a devastated planet like Terra, establish the new galactic capital on another planet, which (like Trantor) is in the more developed and prosperous central regions of human space, but (unlike Trantor) has retained a large base population and a hyperspace-level of civilization. So Beam most likely disagreed with Asimov on this point, and improved on his concept, by locating the capital of his Second Universal State on a planet not too far from Terra, that had remained civilized throughout the Interregnum.²⁵⁴

Piper’s solution is also truer to the historical model, because the successor states of Rome never made Rome their capital. (See **Appendix 1**.)

The last several topics have taken us into a comparison of both author’s future histories. So now, let’s get back to the direct parallels between *The Cosmic Computer* and the Foundation series.

32. Mayors Take Over the Foundation Planet

Through a bloodless coup, mayors with business interests take over both ‘foundation’ planets; Terminus and Poictesme.

a) Foundation Mayors with Business Interests

In Asimov, Salvor Hardin is the mayor of Terminus City. Mayor Hardin has at least one business interest; a very large and secret stake in the Terminus City *Journal*. “When Hardin denied owning the *Journal*, he was perhaps technically correct, but no more. Hardin had been the leading spirit in the drive to incorporate Terminus into an autonomous municipality—he had been elected its first mayor—so it was not surprising that, though not a single share of *Journal* stock was in his name, some sixty percent of it was controlled by him in more devious fashions. There were ways.”²⁵⁵

In Piper, Kurt Fawzi is not the first mayor of Litchfield, on Poictesme; merely the current one. Mayor Fawzi has a couple of business interests. When Conn visits him, he “landed on the top of the Airlines Building and rode a lift down to the office where Kurt Fawzi neglected the affairs of his shipline agency, his brokerage business, and the city of Litchfield.” With the growth of new economic activity caused by the Maxwells, however, Fawzi’s business interests quickly multiply. He becomes the President of Litchfield Exploration & Salvage, and is undoubtedly an officer and stockholder in several of the other subsequently-organized companies.²⁵⁶

Like Mayor Hardin, Mayor Fawzi is “the leading spirit in the drive”, too. In his case, it’s not to incorporate Litchfield and become its first mayor, but to find Merlin. And like Hardin, Fawzi succeeds. Because according to Rodney Maxwell, Mayor Fawzi is “the man most responsible for finding Merlin; the man who first suggested sending my son Conn to Terra to school, the man who, more than anyone else, devoted his life to the search for Merlin, the man whose inextinguishable faith and indomitable courage kept that search alive through its darkest hours.”²⁵⁷

b) Current Planetary Rulers Incompetent

Asimov. When the Galactic Empire begins breaking up and the newly-proclaimed Kingdom of Anacreon becomes a threat, Mayor Hardin chafes at the administrative ineptitude of the Encyclopedists, who make up the Board of Trustees. Their focus is entirely on the compilation of the Encyclopedia Galactica, to the detriment of the people of Terminus. As Hardin puts it, "The Board seemed to suffer violently from Encyclopedia on the brain."

This myopia causes them to not see the growing danger from the neighboring Four Kingdoms, and then take no measures against it. Instead, they retain a blind faith in both the Galactic Emperor, despite the fact that for all his power, he couldn't prevent Anacreon and the other kingdoms from seceding; and in Hari Seldon, whose imminent Time Vault appearance they believe will provide a *deus ex machina* rescue.

Using symbolic logic, Hardin finally succeeds in getting them to face facts, but by then it's too late. Anacreon can't be prevented from establishing a military base on their planet. The Mayor realizes that "They're hopelessly incompetent when it comes to ruling Terminus."²⁵⁸

Piper. Mayor Fawzi, and indeed his whole 'Office Gang', notices the incompetence of the planetary leaders in the capital city of Storisende. The effects are local and global. Locally, "Litchfield was peaceful because everybody was [armed and] prepared to keep it that way. It certainly wasn't because of anything the Planetary Government did to maintain order."²⁵⁹ And globally, the planetary leaders are the ones who put Poictesme into the poorhouse in the first place. The Government is controlled by the "First-Families-of-Storisende oligarchy", and "That's the gang that bankrupted the Government with doles and work relief, and [bankrupted] everybody else with worthless printing-press money after the War". The latter involved "that infernal deluge of unsecured paper currency thirty years ago".²⁶⁰

And in response to the pirating of the *Harriet Barne*, the sack of Waterville, and the sack of other towns, the Government has done just one thing to bring the piracy problem under control. "They offered a big reward for the pirates, dead or alive."²⁶¹ That's it. It's so bad that even though "there hasn't been a single case of piracy inside the city limits of Storisende", one Litchfielder predicts that "Some of these days Blackie Perales and his pirates'll sack Storisende, for all they'd be able to do to stop them."²⁶²

Thus, Piper is essentially saying that the First Families of Storisende 'are hopelessly incompetent when it comes to ruling Poictesme.'

c) A Bloodless Coup Connected With a Major Crisis

In order to face the first Seldon Crisis, Mayor Hardin stages a bloodless coup against the incompetent Encyclopedists. "The Board [of Trustees]? Count them out. After tomorrow, their importance in Terminus affairs won't matter a rusty half-credit."²⁶³ The coup takes place when the Encyclopedists are all gathered in the Time Vault to witness Hari Seldon's first appearance. "By this time, it was all over. Lee's men were in control and the Board was giving orders no longer." Thereafter, Salvor Hardin becomes the ruler of the Foundation planet; his title, however, remains Mayor. Mayor Hardin then peacefully solves the first Seldon Crisis.²⁶⁴

As we've seen, the climax of Beam's novel can be called 'the (first) Merlin Crisis'. And soon after its successful conclusion, Mayor Kurt Fawzi is nominated to become the next President of Poictesme. It is implied that his campaign will succeed, and the rule of the incompetent First Families will come to an end. Rodney Maxwell says, "Everybody, get a drink; a toast to our next President, Kurt Fawzi!"²⁶⁵

Mayor Fawzi will therefore become the ruler of Piper's 'foundation' planet, and this process can actually be called 'a bloodless coup'. It is bloodless, because it is done through peaceful means; a free and fair election. And it is a coup, because the Litchfielders are political outsiders. The First Families of Storisende have apparently been running the planet for two hundred years, ever since its founding, and Mayor Fawzi is probably the first non-Storisender to become Planetary President.

Thus, by getting an unknown political outsider like Fawzi elected Planetary President, it can be said that his Office Gang 'puts over a coup' on the ruling oligarchy of Storisende. Early on, Tom Brangwyn says, "We get a ship out to Koshchei, and the next thing you know we'll be the Planetary Government."²⁶⁶ This actually comes true; for after acquiring Barathrum Spaceport, they get a ship out to Koshchei, and by the end of the book, Kurt's about to get elected, and will undoubtedly appoint many members of his Office Gang to important positions in Storisende. They will then become the Planetary Government.

d) Incompetent rulers: Pirenne, Fawzi and Vyckhoven

It must be admitted, however, that Kurt Fawzi is no Salvor Hardin. Mayor Fawzi is portrayed as something of a dimwit, while Mayor Hardin is an astute leader; a 'self-reliant man', in Piper's terminology. In *The Cosmic Computer*, the main self-reliant men are Conn and Rodney Maxwell, not Kurt Fawzi.

Mayor Fawzi therefore seems to be a *combination* of Mayor Hardin (capable leader of Terminus City) and Lewis Pirenne (head of the incompetent Board of Trustees who run the Foundation). Both leaders of the Foundation planet in one. As previously mentioned, Mayor Fawzi "neglects" Litchfield (apparently the only city in Gordon Valley); this seems similar to how Director Pirenne neglects Terminus City (the only city on Terminus). "Now, Hardin, the Board of Trustees has not barred the establishment of a municipal government on Terminus. We understand one to be necessary because of the increase in population since the Foundation was established fifty years ago, and because of the increasing number of people involved in non-Encyclopedia affairs. *But* that does not mean that the first and *only* aim of the Foundation is no longer to publish the definitive Encyclopedia of all human knowledge." ²⁶⁷

This brings us to another shared characteristic. Director Lewis Pirenne is unwavering in his focus on the Encyclopedia Galactica (the gathering and publication of all human knowledge), and Mayor Kurt Fawzi is unwavering in his focus on Merlin (whose memory bank contains all human knowledge).

Indeed, Kurt's obsession with Merlin becomes so bad that "he's forgotten he is Mayor of Litchfield. He's forgotten there is a Litchfield." ²⁶⁸ And Pirenne's obsession with the Encyclopedia is so bad he seems to forget there is a Terminus City. Pirenne: "I do not conceive, Hardin, that the Foundation can have any interest other than the Encyclopedia." Hardin: "I didn't say the Foundation; I said *Terminus*. I'm afraid you don't understand the situation. There's a good million of us here...and not more than a hundred and fifty thousand are working directly on the Encyclopedia. To the rest of us, this is *home*...Compared with our farms and our homes and our factories, the Encyclopedia means little to us." ²⁶⁹

As the *planetary* ruler, however, Director Pirenne's neglect of all Terminus outside the Encyclopedia also parallels President Jake Vyckhoven's neglect of all Poictesme outside of the capital, Storisende.

	Asimov	Piper
Foundation planet	Terminus	Poictesme
Planetary ruler	Director Lewis Pirenne	President Jake Vyckhoven
Ruler neglects	all of Terminus, save for ▼	all of Poictesme, save for Storisende
Ruler's obsession	Encyclopedia Galactica (accumulation of all human knowledge)	Merlin (memory banks contain all human knowledge) ▲
Mayor	Salvor Hardin (Terminus City)	Kurt Fawzi (neglects Litchfield in Gordon Valley, but fixated on Merlin.)
Mayor's business Interest(s)	sixty percent control of the Terminus City <i>Journal</i>	"his shipline agency, [and] his brokerage business"; later President of LE&S and stock- holder in other Maxwell companies
"leading spirit"	to incorporate Terminus City	to find Merlin
Mayor takes control of foundation planet	by bloodless coup during the first Seldon Crisis	through peaceful election after the first 'Merlin Crisis'
New ruler's title	Mayor Salvor Hardin	President Kurt Fawzi

Since Merlin has been found, and will undoubtedly play a major role in the Fawzi Administration's policies, does this mean that Kurt will stop being a 'Pirenne' and become a 'Hardin'? Probably not, because the 'Hardins' in Beam's story are Rodney and Conn Maxwell, the self-reliant men who will be the actual rulers, running things from behind the scenes. That fact, plus Kurt's new title of 'President', also makes him a parallel of his neglectful predecessor in office, Jake Vyckhoven, the other parallel of Lewis Pirenne. Thus, President Fawzi will most likely neglect Poictesme just as he did Litchfield.

In his case, however, it is probably because he defers to Merlin, whose Plan is not just concerned with Poictesme, nor the Trisystem, but with Terro-Humanity as a whole.²⁷⁰

33. Parallel Searches for the Hidden Predictor

In both stories, the location of the psychohistoric predictor (the Second Foundation, Merlin) is initially unknown, and therefore the object of an extensive Search. Both Searches take up an entire book. In Asimov, this is *Second Foundation* (in two parts, Search by the Mule and Search by the Foundation). In Piper, *The Cosmic Computer* itself is essentially 'the Search for Merlin'; beginning in Chapter II and concluding in Chapter XX, thereby involving 19 out of 22 total chapters.

In both authors' Searches, various deductions are made as to where the hidden predictor is located, including that it does not exist, and various planets are searched without result. Moreover, both Searches actually begin four decades earlier. In both cases, this earlier phase involves records at the capital planet being examined.

a) *The Search for the Second Foundation, Phase 1*

The Search for the Second Foundation really starts in the fourth quarter of *Foundation and Empire*. It comprises Chapters 19-26 in Part II, The Mule; from Start of the Search to End of the Search. This earlier phase of the Search, or 'Phase 1', begins when the Mule conquers Terminus, thereby disrupting the Seldon Plan. Escaping the conquest are "The Scientist" (and indeed Psychologist) Ebling Mis, Toran and Bayta Darell, and the Mule's clown, Magnifico. They flee to the independent Trading planet of Haven, where Randu tells them that in order to defeat the Mule, whose powers are psychological in nature, "You must find that Second Foundation."²⁷¹

Via Haven, "the Autarchy of Filia" and Neotrantor, Mis and company travel from Foundation space to Trantor, the now-ruined and former capital of the remnant Galactic Empire. On Trantor, Mis researches the records in the Imperial Library for the answer. He learns that "The Foundations were established at a great Psychological Convention presided over by Hari Seldon", but in all the literature, "nobody mentions the Second Foundation. There has been no reference to it anywhere." Mis asks Bayta Darell, "Do you know the thoroughness with which Seldon covered his traces?...Our Foundation was simple, but the Second Foundation was only a name." Nevertheless, and under the emotional control of the Mule, Mis actually deduces the Second Foundation's location, but is killed by Bayta Darell before he can relay the information.²⁷²

Bayta is the grandmother of Arcadia Darell, who participates in Phase 2 of the Search, and actually "discovers" the location of the Second Foundation. Phase 1 therefore occurs "Nearly half a century", or forty-some years, before the main phase of the Search; Phase 2.²⁷³

b) *The Search for Merlin, Phase 1*

The Search for Merlin really starts forty years before *The Cosmic Computer*. Right after the System States War ends, "The people who had grown richest from the War had left [Poictesme], taking their riches with them. For the next forty years, those who remained had been living on leavings."²⁷⁴ In order to solve their problems, mainly economic, the members of the Fawzi's Office Gang begin searching for Merlin, even though all they have to go on is the name, and that it's a Federation supercomputer.

But over the next several decades, essentially their entire adult lives, the Search is unsuccessful. Eventually, they pool their meager financial resources and send Conn Maxwell to school at the University of Montevideo. Presumably via Odin, and possibly another planet or two, Conn travels from Piper's 'foundation' planet to the capital of the Federation, Terra. There, he majors in computer science, but his real mission is to search the central records for the location of Merlin. This includes the University Library and Armed Forces Records.

As Conn later recounts, "I went over all the records available to the public; I used your letter, Professor, and the head of our Modern History Department secured me access to non-public material, some of it still classified."²⁷⁵ But like Ebling Mis at the Imperial Library, Conn's search of Federation records is unsuccessful. "I could find nothing, not one single word, about any giant strategic planning computer called Merlin, or any Merlin Project."²⁷⁶

Although the Fawzi's Office Gang don't know it, Conn *should* have found the location of Merlin. The reason for the lack of evidence is that the top members of Project Merlin, led by General Foxx Travis and General Mike Shanlee, have spent the last forty years "trying to suppress any mention of Merlin or the Merlin Project."²⁷⁷ This suppression includes the deliberate post-War destruction of all records pertaining to Merlin at Force Command Duplicate and at the factory on Panurge that produced Merlin's parts.²⁷⁸ By extension, the files at Armed Forces Records on Terra were probably destroyed as well; but that likely occurred after Generals Travis and Shanlee returned to Terra after the war.²⁷⁹

To paraphrase Ebling Mis's words on Trantor, Conn's research on Terra finds only that 'nobody mentions Merlin. There has been no reference to it anywhere.' And that's because of 'the thoroughness with which General Travis covered his traces...Merlin was only a name.'

c) The Search for the Second Foundation, Phase 2

In *Search by the Mule*, General Han Pritcher, formerly of Terminus, makes five "major expeditions" on behalf of the Mule "into the boundlessness of the Galaxy" looking for the Second Foundation, but fails to find it.²⁸⁰ His sixth expedition is with Bail Channis, who directs him to the backwater world of Tazenda, and then to *its* backwater, the planet Rossem. There are Second Foundationers on Rossem (including Channis), but the Second Foundation itself is not there.²⁸¹ Their true location still eludes the Mule.

Forty-some years later, in *Search by the Foundation*, Asimov's characters on Terminus make various deductions as to where the Second Foundation is located; what Seldon really meant by "at the other end of the Galaxy." First, Homir Munn says that it doesn't exist. "Friends, *there is no Second Foundation!* ...And what is more, there was never one." He subsequently phrases it as, "There is not, and has never been, any Second Foundation."²⁸² Pelleas Anthor contradicts Munn. "*I say you lie...* I say it without any intention of personal offense. You cannot help lying; you don't realize that you are. But you lie just the same."²⁸³ Anthor then proves that Munn has been Tampered with by the Second Foundation, and goes on to state his own answer. "The Second Foundation is on Kalgan." He adds, "What is their function? To help preserve the Plan. Who are the main card players of the Plan? We, the First Foundation. Where can they best observe us, then, and serve their own ends? At the opposite end of the Galaxy? Ridiculous! They're within fifty parsecs actually, which is much more sensible."²⁸⁴

Then, in Chapter 21, "The Answer That Satisfied" is given by Dr. Toran Darell, after his daughter Arcadia sends him the message that "a circle has no end." Dr. Darell deduces from this that Anthor too is wrong. Kalgan is likewise too far away to control events; the Second Foundation is right there on Terminus. "You thought that fifty parsecs distance was more sensible. I tell you that that is also too far. That no distance at all is more sensible. And where would they be safest? Who would look for them here? Oh, it's the old principle of the most obvious place being the least suspicious."²⁸⁵ The First and Second Foundations are on the same planet, and have been all along.

d) The Search for Merlin, Phase 2

In *The Cosmic Computer*, forty years after Merlin is 'lost', Piper's characters make various deductions as to where the hidden predictor is located, including that it doesn't exist. This 'second phase' of the Search also involves looking all over the System (Trisystem) for it, but Merlin is not found on any planet.

First, Merlin is believed to have always been on Poictesme. Kurt Fawzi: "Conn, what did you find out?...Do you know where it is?" But Conn deflates those hopes. "I hope...that you don't expect me to show you the cross on the map, where the computer is buried."²⁸⁶ Morgan Gatworth raises the possibility that it's not on the planet at all. "It didn't have to be on Poictesme, even...It could be anywhere in the Trisystem." Lorenzo Menardes takes his lead and says that he would have put it "On one of the moons of Pantagruel". Kurt Fawzi objects, "But that's in the Gamma system, three light years away...There isn't a hypership on this planet, and it would take half a lifetime to get there on normal-space drive."²⁸⁷

Parenthetically, Menardes is essentially saying that Merlin 'is at the other end of the Trisystem', paralleling the other end of the System (Galaxy) in Asimov.

Conn replies, "Then...we will build a hypership...Merlin may be on Koshchei; that's where the components would be fabricated, and the Armed Forces weren't hauling anything any farther than they had to. Koshchei's only two and a half minutes away by radio; that's practically in the next room."²⁸⁸ As the fourth planet of Alpha Gartner, Koshchei is a Mars to Poictesme's Terra. At one point, Koshchei is said to be "twenty-eight million miles" away.²⁸⁹

In Asimovian terms, Conn is therefore saying 'where could Merlin have best served the Armed Forces' interest? At the other end of the Trisystem? Ridiculous! They're in the Alpha system actually, within fifty million miles, which is much more sensible.' Koshchei therefore parallels Kalgan, and Homir Munn's trip to Kalgan in search of the Second Foundation is paralleled by Conn Maxwell's trip to Koshchei, ostensibly to look for Merlin.

But when the Maxwells leave the meeting, Conn confesses the truth to his father. Rodney: "There is no Merlin. Is that it?" Conn: "There never was one."²⁹⁰ This exchange is very close to Homir Munn's "there is no Second Foundation...And what is more, there was never one." Notice too that, like Anthon to Munn, we can say to Conn that "you lie...You cannot help lying; you don't realize that you are. But you lie just the same." Because Conn was 'tampered with', or lied to, by General Travis, into believing that Merlin doesn't exist; just as Munn was Tampered with by the Second Foundation, into believing that it doesn't exist.

Other groups on Poictesme soon join the Search for Merlin; indeed, one company even calls itself "Seekers for Merlin, Ltd.", and its stock begins "skyrocketing". Here Piper shows his talent for carefully chosen words, because "skyrocketing" evokes the cigar-shaped rocketships that were launched into space to seek for the Second Foundation amid the ruins of the Galactic Empire. An Empire whose emblem actually included a rocket; the iconic Spaceship-and-Sun.²⁹¹

Later, one of the Poictesmean companies charts the hypership "*Andromeda*", in order to hunt for Merlin on Panurge, in the Gamma System.²⁹² Another appropriate word-choice by Beam, since this group is not only searching for his version of the Second Foundation 'at the other end' of the Trisystem, they're doing so in a ship named for a 'Galaxy'—in fact, the galaxy closest to the Milky Way! One can therefore say that *they're searching for Merlin 'at the other end of the System in a Galaxy'*. And if you're at the very edge of our galactic system, like Terminus, then the next closest galaxy would be Andromeda.

34. Found at the Same 'End' of the Galaxy

Both authors' First and Second Foundations are discovered to be located on the same planet. The same 'end' of the Galaxy.

a) "A Circle Has No End"

Asimov. Dr. Darell is able to prove his daughter's assertion that "a circle has no end". The Second Foundation is located on Terminus, hidden within the First Foundation. He invents a "Mind Static device", which he says "sets up an artificial electromagnetic pattern, which to the mind of a man of the Second Foundation would be like a beam of light to us. But the Mind Static device is kaleidoscopic. It shifts quickly and continuously, faster than the receiving mind can follow. All right, then, consider it a flickering light; the kind that would give you a headache, if continued long enough. Now intensify that light or that electromagnetic field until it is blinding—and it will become a pain, an unendurable pain. But only to those with the proper sense; *not* to the unsensed."²⁹³ When he activates it, Pelleas Anthon collapses in agony, revealing himself to be a Second Founder. Under questioning, Anthon corroborates the Darells' theory, stating that the Second Foundation consists of fifty people on Terminus.²⁹⁴

Piper. And after all their speculating about where Merlin is located, after all their flights to Koshchei, Janicot and Jurgen, and Panurge looking for it, where is the Cosmic Computer finally found? Why, right there on Poictesme, Piper's 'foundation' planet, where it was thought to exist all along! As Conn Maxwell says to Kurt Fawzi, "You always claimed that Merlin was here in Force Command. You had it backward. Force Command is inside Merlin."²⁹⁵

Thus, 'a circle has no end'; the Search for Merlin starts on Poictesme, and ends there, too. If that were not enough, Piper even symbolizes the phrase. The discoverer of the Trisystem was Genji Gartner, whose ship was the *Ouroboros*, and whose voyages around the Federation ended on Poictesme. The

first new hypership completed on Koshchei is named *Ouroboros II* in his honor, and its maiden voyage also ends on Poictesme, coincidentally just before Merlin is found.

An ouroboros is a looped snake eating its own tail; a feasting that never stops, *a circle that has no end*. (Figure 2.)



Figure 2. The ouroboros; Piper's version of "a circle has no end".²⁹⁶

Indeed, with the *Ouroboros*, Beam seems to combine 'a circle has no end' with 'symbolic logic'. Symbolic logic plays an important role in "The Encyclopedists" section of *Foundation*. According to Mayor Salvor Hardin, "there is a branch of human knowledge known as symbolic logic, which can be used to prune away all sorts of clogging deadwood that clutters up human language."²⁹⁷ He uses symbolic logic to prove to the Encyclopedists that Anacreon's elaborate treaty with the Galactic Empire is in reality "a declaration of total independence on the part of Anacreon and a recognition of that status by the Empire"; and that Lord Dorwin's assurances of Imperial support of the Foundation against Anacreon are worthless. Terminus is on its own; the Encyclopedists' blind faith in the Empire has been completely misplaced.²⁹⁸

In the present example we therefore see yet another improvement on Asimov. Because Piper's symbolic logic *gets rid of the words altogether*, and uses a 'logical symbol' (the ouroboros) to *represent* the real meaning; a circle has no end. A subtle touch worthy of the Second Foundation itself. (And we will see a couple more below.)

b) Located at an 'End' of the Galaxy

One of the major themes in Asimov's series is the mystery as to where the Second Foundation is located. Seldon told Gaal Dornick that it would be placed ' "at the other end of the Galaxy, let us say," and he smiled, "at Star's End." ' ²⁹⁹ And after all the various guesses that are made over many years, and all the searching of the galaxy that is done, at the end of *Second Foundation* Star's End is finally revealed to be a poetic name for Trantor. Preem Palver, First Speaker: ' "All roads lead to Trantor," says the old proverb, "And that is where all stars end." ' ³⁰⁰

It is very interesting that in one of his letters to John W. Campbell, H. Beam Piper wrote, "Now, I am pretty much like Ike Asimov trying to figure out where to put the Second Foundation."³⁰¹ Because after all the guessing his characters do, and all the searching of the Trisystem that is done, we've seen that Beam's Second Foundation, Merlin, is finally revealed to be located on Poictesme. And the capital of Poictesme is a city named "Storisende". That's right,

Merlin is located at an 'end' of the Galaxy—let us say (and I smile), at "Storis Ende".

Storisende is therefore Piper's version of Star's End. The name Storisende is a play by James Branch Cabell on "Story's End",³⁰² and it is precisely at the end of the classic Foundation stories that the truth about Star's End is finally revealed. Similarly, it is near the end of Beam's story that Merlin's location is revealed.

An exact parallel with Asimov would have Merlin (Piper's Second Foundation) actually located in or near the city of Storisende (his Star's End), but Beam included a subtle connection to that effect. The Cosmic Computer is located in Force Command Duplicate, a secret copy of "the old Force Command headquarters, the one the Planetary Government took over" after the War.³⁰³ The original Force Command is therefore controlled by Storisende, and is probably located near the city, just as in the United States, the Pentagon is near Washington DC.

Thus, Storisende, Force Command; Force Command (Duplicate), Merlin. Cancel out the two Force Commands which equal each other, and that leaves us with Storisende, Merlin.

Incidentally, while Piper was not explicit with the planetary geography, the Foundation model actually suggests that Litchfield and Force Command Duplicate are located 'at the opposite end' of Poictesme from Storisende and Force Command. The other side of the planet.

We can also add that Storisende is where the story of Genji Gartner, and his ship the *Ouroboros* (the circle that has no end), actually ended. "Old Genji Gartner, [was] the scholarly and half-piratical space rover whose ship had been the first to enter the Trisystem...Of course, the camp village at his first landing site on [Poictesme] had been called Storisende. Thirty years later, Genji Gartner had died there, after seeing the camp grow to a metropolis, and Poictesme become a Member Republic in the Terran Federation."³⁰⁴

By 'star-rover', Piper implies that Gartner *wandered all around the (known and unknown) Galaxy* before settling on Poictesme; another parallel of the 'search' (for a home, in his case) as well as 'a circle has no end' (the *Ouroboros* representing his seemingly endless voyages, 'circling' the Federation until ending up on Poictesme). Indeed, after his "first" landing at the place which became Storisende, Genji may well have renewed star-roving, at least in the Trisystem (particularly to nearby Koshchei),³⁰⁵ before settling on the planet after his second, third or even fourth landing. If so, these deduced round-trips would also parallel the multiple searches of Han Pritcher, who always came back to the Mule on Kalgan.

And there's more. Because as anyone who has read Asimov knows, "The Answer That Satisfied" (Terminus, Poictesme) was *not* "The Answer That Was True" (Trantor, Gilgamesh).³⁰⁶

c) All the Clues Missed

When Preem Palver reveals the Second Foundation's true location, he lists all the many clues that could have led the First Foundation to discover the answer, Trantor, on their own. These include the fact that Seldon was a *social* scientist, not a physical one, and the social 'opposite end' of the Galaxy would be at the *center*, not the opposite physical end of the Galaxy; that for three centuries the Galactic Empire could have destroyed Terminus, unless prevented by the Second Foundation on Trantor; that in the horrific Sack of Trantor, only "the Imperial Library and the grounds about it remained untouched", because it was the Second Foundation's headquarters, and "even that apparently overwhelming hint passed them by"; Ebling Mis' astonishment at discovering the Second Foundation's location while researching the matter on Trantor; that it was on Trantor where "a normal Foundation girl [Bayta Darell] defeat[ed] the tremendous mutant powers of the Mule"; plus Arcadia Darell's birth on Trantor, and her return to that planet right after discovering what she thought was the answer. Everything pointed to Trantor. Palver finishes with "And all those flaws in our secrecy; those gaping holes; remained unnoticed, because Seldon had spoken of 'the other end' in his way, and they had interpreted it in their way."³⁰⁷

One can say much the same about Piper's book. Because as John Carr writes, "H. Beam Piper was never a hard science-fiction author, i.e., one whose primary interest was technology and science...he was more interested in human beings and how they related to larger historical forces."³⁰⁸ Beam was therefore a *social* science-fiction author; indeed, one might almost say, a psychohistoric one. Piper himself revealed that "my stories all have a *political and social slant* instead of a physical-science slant".³⁰⁹

This made Beam the perfect (psychohistoric) foil for the hard-science (physical) Asimov; the right man to take another look at the whole Foundation concept. And as we've seen, Beam left a great many clues to the literary model he used in *The Cosmic Computer*. By following them, one can find the answer, the Foundation series, on one's own. So once again, let's paraphrase Asimov. 'And all these flaws in Piper's secrecy; these gaping holes, remained unnoticed because Beam had spoken about "Storisende" in his way, and his readers had interpreted it in their way.'

Another chart, showing the Searches in order, may make the parallels clearer.

Asimov	Piper
1. The Second Foundation is "at the other end of the Galaxy", at "Star's End" (Seldon).	1. Merlin is right here on Poictesme (Fawzi, et al.), whose capital is "Storisende".
2. Old Ebling Mis, "The Scientist", travels from Terminus to Trantor. There, he searches the records in the Imperial Library at the University of Trantor for the Second Foundation's location. He finds that "nobody mentions the Second Foundation. There has been no reference to it anywhere." But Mis <i>should</i> have found it; the reason for the lack of evidence is "the thoroughness with which Seldon covered his traces... the Second Foundation was only a name." Under the Mule's emotional control, Mis is able to deduce the true answer, but he is killed by Bayta Darell before he can reveal it.	2. Young Conn Maxwell, a computer scientist, travels from Poictesme to Terra. There, he searches records in the Montevideo University Library, and at Armed Forces Records, for the location of Merlin. He "could find nothing, not one single word, about any...giant computer called Merlin". But Conn <i>should</i> have found it; the reason for the lack of evidence was the thoroughness of General Travis in "suppress [ing] any mention of Merlin", including by destroying all pertinent records on Poictesme and Panurge, and probably those on Terra. The result is that Merlin is only a name.
3. The Second Foundation could be anywhere in the System; the Mule sends Han Pritcher out into the Galaxy five times on five different routes without success. Bail Channis says it is on Tazenda, then Rossem. There are Second Foundationers on Rossem, but the Second Foundation itself is not there.	4. Merlin "could be anywhere in the Trisystem" (Morgan Gatworth), perhaps "On one of the moons of Pantagrue" (Lorenzo Menardes). "But that's in the Gamma system, three light years away (Fawzi). This is essentially 'the other end of the Trisystem'. Several groups build spaceships to search different areas of the Trisystem; the plant that manufactured Merlin's positronic parts is found on Panurge, in the Gamma system, but Merlin itself is not there.
4. Forty-some years later, the Search by the First Foundation begins on Terminus.	3. Forty years after the System States War ends, the Fawzi's Office Gang agrees to begin the new Search for Merlin on Poictesme.
5. No, "there is no Second Foundation...And what is more, there was never one." (Munn, Tampered with by the Second Foundation.) But, " <i>I say you lie...</i> You cannot help lying; you don't realize that you are. But you lie just the same." (Anthon to Munn) Because the Second Foundation does exist.	6. No, "There is no Merlin", and "There never was one." (The Maxwells, lied to or 'tampered with' by Travis. Thus, they can't help lying; they don't realize that they are. But they lie just the same, because Merlin does exist.)

6. No, “the Second Foundation is on Kalgan”; not at the opposite end of the Galaxy, but “within fifty parsecs” of Terminus, “which is much more sensible.” (Anthr, lying in turn.)
7. No, “a circle has no end”; it's right here on Terminus. Both Foundations of the coming Second Galactic Empire are on the same planet (the Darells). And in fact the Second Foundation is ‘found’ on Terminus, and ‘destroyed’ by the First Foundation, thereby neutralizing the threat it poses.
5. No, “Merlin may be on Koshchei”, in the Alpha system and less than fifty million miles from Poictesme. “That’s where the components would be fabricated, and the Armed Forces weren’t hauling anything any farther than they had to. Koshchei’s...practically in the next room.” (Conn, lying.) This is another way of saying that ‘Koshchei is much more sensible than the other end of the Trisystem’.
7. No, it's right here on Poictesme after all (the Maxwells, et al.); both the physical nucleus (first foundation, Poictesme) and the future history predictor (second foundation, Merlin) of the coming Second Universal State are on the same planet. Merlin is then nearly destroyed; Shanlee attempts to vaporize it with a vest-pocket thermonuclear, and then urges them to “destroy the whole thing”; Conn says that they could burn out all of Merlin’s circuits and falsify his predictions; and then Merlin puts himself on trial. The computer’s proposal to falsify its own predictions averts his destruction, and actually neutralizes the threat it poses to the Federation.

As usual, the parallels are not exact. But they are close; all I did was flip Piper’s 3 and 4, and 5 and 6, to match Asimov’s order. Notice also that part of Beam’s parallel of ‘a circle has no end’ is *circular reasoning*. The characters begin by believing Merlin is on Poictesme, but after various speculations, including that it doesn’t exist, find it right there on Poictesme, where it was thought to be all along.

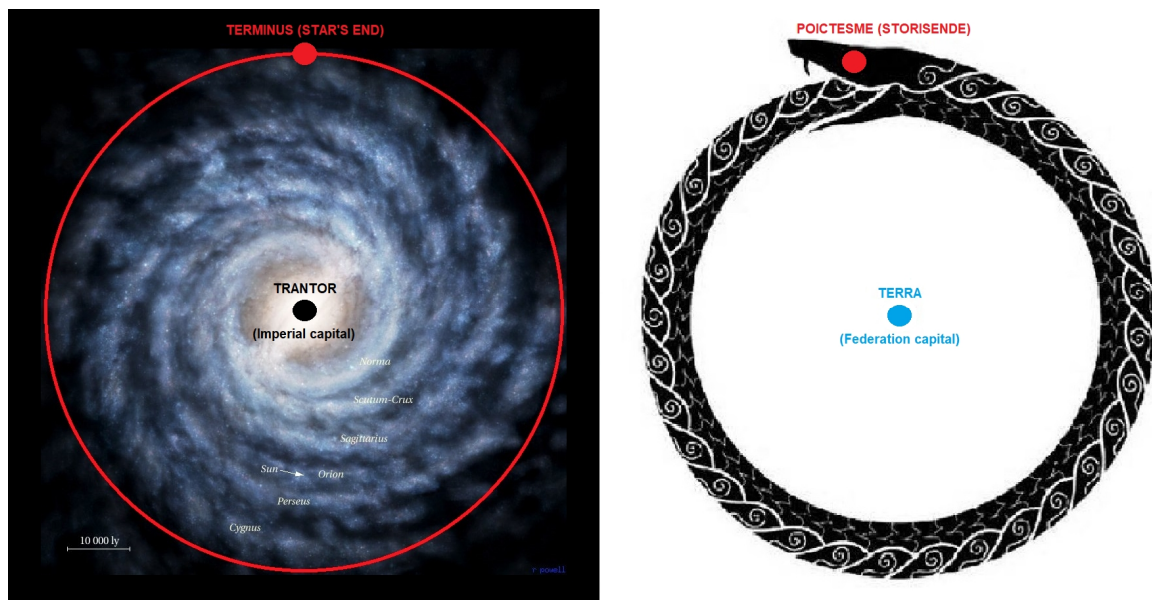


Figure 3. Terminus and Poictesme; located at ‘ends’ of an endless circle.³¹⁰

We can quote Asimov to illustrate the point. When revealing how he knows the Second Foundation is on Terminus, Dr. Darell tells the others that “The Galaxy is a flat, lens-shaped object. A cross-section of it along the flatness is a circle, and a circle has no end...We...are located at Terminus at the rim of that circle. We are at an end of the Galaxy, by definition.” (Figure 3, left side.)

So now, let’s start with point 1 in the list of Piper’s clues, above. The Federation’s cross-section is probably a rough circle, centered on Terra. Poictesme is on its outer rim, and its capital Storisende is therefore at an ‘end’ of the Galaxy, by definition. (Figure 3, right side.) Darell: “Now, follow the rim of that circle [from Poictesme] and find the other end. Follow it [point 3, Pantagruel], follow it [point 4, Koshchei], follow it [point 6, it doesn’t exist], and you will find no other end. You will merely come back to your starting point [7, Poictesme]. —And *there* you will find the Second Foundation [Merlin].” “There?” Anthor repeated. “Do you mean here?” [Poictesme] “Yes, I mean here!” cried Darell, energetically. “Why, where else could it possibly be?”³¹¹

Thus, when Piper modeled Asimov, he apparently took the opposite—and more logical—view; stars end where your civilization ends; out on the periphery, not at the center.

d) What about that Opposite End?

He also filled in one of Isaac’s gaping holes. Through most of *Foundation*, all of *Foundation and Empire*, and the first chapter of *Second Foundation*, the impression is given that Star’s End is “at the extreme end of the long axis of the Galaxy”; “at a point in the periphery a hundred eighty degrees around the rim” from Terminus. That would place the Second Foundation about a hundred thousand light-years away from the First.³¹² (In Figure 3, left image, this would require moving the red dot of Star’s End from Trantor down to the ‘bottom’ of the Galaxy.) After the breakup of the First Galactic Empire commences, this entire end of the System becomes an unknown region; *cosmos incognita*.

But in the second chapter of *Second Foundation*, “*the era of the so-called Search*”, Han Pritcher’s explorations for the Mule enable him to compile “a completely worked out guide to the political units of the Opposing Periphery.” This is probably the first time an actual physical search of the other end of the Galaxy has ever been conducted, and during these expeditions, Pritcher did “quite a bit of star-hopping” among “all the kingdoms, republics, planet states and dictatorships of one sort or another in that political wilderness”.³¹³

In a creative lapse, however, Asimov neither tells us the names of any of those systems or their planets, nor any other details of anything interesting that Pritcher found. Like the vast majority of the Galaxy in the Interregnum, Isaac leaves the map at the other end almost completely dark.

Presumably it didn’t matter, because the Second Foundation was never there, anyway.

Piper, on the other hand, not only names the system and planets at the other end of the Trisystem (Gamma Gartner, Panurge and Pantagruel)—*he nearly located his Second Foundation there*. We’ve seen that the parts to Merlin were produced in a factory on Panurge, in the Gamma system. If they had also been *assembled* there, then Merlin would indeed have been located ‘at the other end’ of the Trisystem. Moreover, the factory that produced the parts could certainly have made a second set, a third set, and so on. And in *The Cosmic Computer*, there are several references about building another Merlin, perhaps many of them. Rodney Maxwell: “I can’t see why they didn’t build a dozen Merlins. This isn’t the only planet that has problems they can’t solve for themselves.”³¹⁴ And faced by the daunting task of building a hypership from scratch, Yves Jacquemont asks, “Conn, why don’t you just build a new Merlin? It would be simpler.”³¹⁵

Thus, if the System States Alliance *had* conducted a space-attack on Poictesme, and Merlin and Force Command Duplicate had been destroyed “when it [was] raining hellburners and planetbusters”,³¹⁶ the factory on Panurge could have produced the parts for another Cosmic Computer to replace the one that was lost. And with Poictesme devastated, it would presumably have been *assembled* there, as well. A ‘Second Merlin’ would have existed at the other physical end of the Trisystem, just as the Second Foundation was supposedly at the other physical end of the Galaxy.

Incidentally, a second Merlin would also fulfill one of the World War II aspects of the System States War. John Carr compares the Merlin Project to the Manhattan Project. Project Merlin only produces one Merlin (but could have produced a second or even many), but the Manhattan Project produced two atomic bombs; Fat Man and Little Boy. Followed by the host of others produced afterward.

As depicted on the left side of Figure 3, most of the galactic maps that I've seen place Sol and Earth in the 'southern' part of the galaxy, directly below the Core. But that's not the case in Asimov and Piper. Isaac modeled the Galactic Empire on the Roman Empire, making the Milky Way a parallel of the Mediterranean World. Trantor is in the galactic core, paralleling Rome's location roughly in the center of the Mediterranean.

Greece is located to the east of Italy (the whole eastern half of the Roman Empire spoke Greek), and Terminus appears to be 'east' of Trantor. The First Foundation is bordered by the Four Kingdoms, all of which Asimov gave Greek names; Anacreon, Smyrno (Smyrna), Konom and Loris. But this 'eastern' region of the Galactic Empire seems to be on the other side of the Milky Way from the Sirius Sector, where Earth is located. Salvor Hardin states that "Anacreon stands square across what was our last remaining trade route to Santanni and to Trantor and to Vega itself."³¹⁷ Vega is only 24.3 light-years from Sol, probably placing Vega in the Sirius Sector as well. But what this means is that Asimov's Earth is located on the 'western' side of the Milky Way.

And "on the western side" of the Galaxy³¹⁸ is precisely where Piper put his First Galactic Empire, whose capital is Odin, not too many light-years from Terra. The Foundation model explains why he did so; once again, he was following Asimov. But "the western side" also appears to be based on Beam's *historical* model—yet again paralleling Asimov's—Western History, as will be shown in **Appendix 1**.

e) Panurge and "The Moons of Pantagruel"

Aside from filling in one of Asimov's gaping holes, Beam may have had another reason for providing names for a few of the planets in the Gamma Gartner system. Because he seems to have included an inside joke related to 'the opposite end'. When discussing the possible location of Merlin, Lorenzo Menardes says "You know where I'd have put it?...On one of the moons of Pantagruel." And at the meeting when they organize the Search for Merlin under cover of another salvage operation (the organizing of Litchfield Exploration & Salvage), he repeats the idea. "I still think it's somewhere off planet... [perhaps] the moons of Pantagruel." Because of Lorenzo's apparent fixation, Conn muses that "Evidently he'd read something, or seen an old film, about the moons of Pantagruel."³¹⁹

The multiple references always made me feel that Piper was hinting at some hidden meaning to the phrase. We've seen that Pantagruel and its moons are located at 'the opposite end' of the System, as in Asimov; but Beam makes them sound interesting and even romantic. That may be true within his fictional universe; in whatever old film or book Menardes saw or read. But the name of Pantagruel comes from François Rabelais, who is part of the "Surromanticist Movement" current when the Trisystem was discovered.³²⁰

In Rabelais, Pantagruel is a giant, the son of Gargantua. There is a vague reference to him visiting Luna. "How he visited the regions of the moon, to know whether indeed the moon were not entire and whole; or if the women had three quarters of it in their heads; and a thousand other merriments, all veritable."³²¹ But that doesn't seem much to go on; plus it only refers to a single moon, not multiple ones. Fortunately, however, there is an alternative—a crudely humorous one.

Rabelais' book *Gargantua and Pantagruel* is "written in an amusing, extravagant, and [satirical](#) vein, and features much crudity, [scatological humor](#), and violence (lists of explicit or vulgar insults fill several chapters). The censors of the [Collège de la Sorbonne](#) stigmatized it as obscene."³²² As for the style of Rabelais, "Wordplay and risqué humor abound in his writing...His works are also known for being filled with sexual [double-entendres](#), dirty jokes and bawdy songs that may shock even modern readers."³²³ In just one example, Pantagruel "befriends the hard-partying jokester [Panurge](#). Together with a group of friends, they intoxicate an army of invading giants, burn their camp, and drown [the] survivors in urine."³²⁴ "Piss on them", it seems, is not a new insult; though that may be its first (literary) use as a weapon of war.

Thus, Pantagruel's 'moons' may mean his butt-cheeks. For when he finishes a meal with his friend Panurge, the latter "forthwith rising up, he gave a fart, a leap, and a whistle, and most joyfully cried, "Ever live, Pantagruel." When Pantagruel saw that, he would have done as much, but, with the fart that he let, the earth trembled nine leagues about: wherewith, and with the corrupted air, he begot above three and fifty thousand little men, ill-favoured dwarfs; and with one fisp [fizzle] that he let, he made as many little women...So did Pantagruel, and called them pigmies. Those he sent to live on an island thereby...for these little ends of men...are commonly very testy and choleric. The physical reason whereof is, because their heart is near their turd."³²⁵

Assuming that was what Beam meant, then he was making a crudely vulgar jest. Because since Pantagruel is a giant, the *planet* Pantagruel is probably a *gas* giant. Gas, flatulence; *methane*. And Piper says that the largest planets in the Trisystem are “a couple of gas giants on Gamma”.³²⁶ Although he doesn’t specify, one would presume that the larger of the two is named “Gargantua”, after the father of Pantagruel, and is the Gamma system’s parallel of Jupiter. In turn, this means Pantagruel is the smaller of the two gas giants, and therefore most likely the parallel of—wait for it—*Uranus* (your anus)!

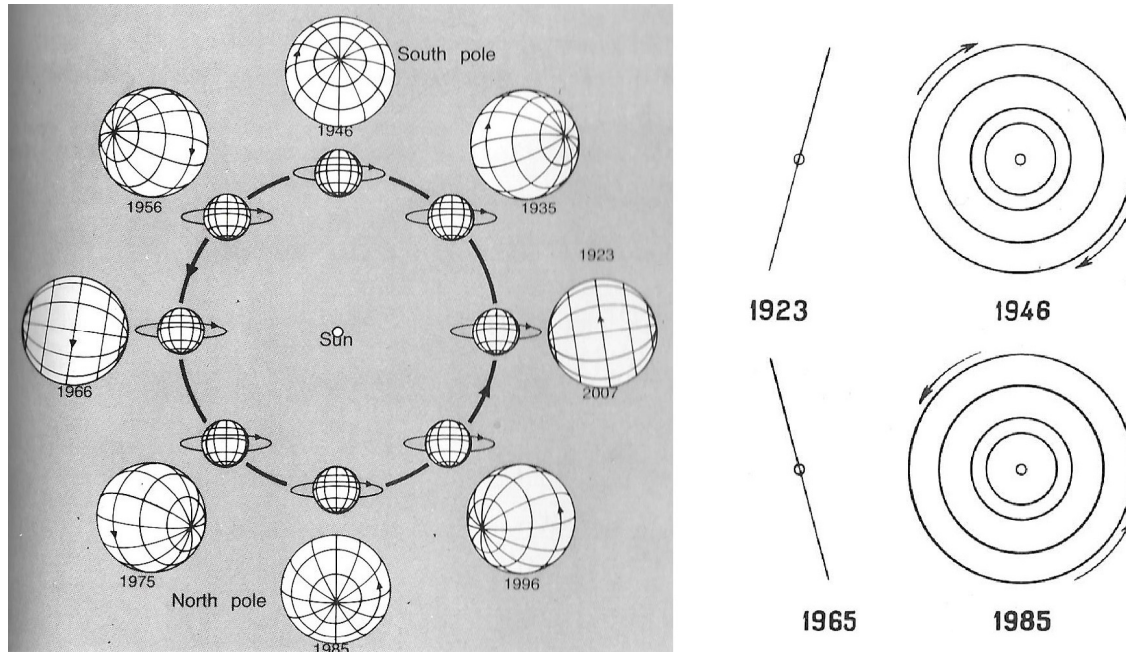


Figure 4. The appearance and motion of Uranus and its satellites at various phases during one sidereal revolution.³²⁷

While it may have been a vulgar jest on Beam’s part, he would nevertheless have been correct to make it. Because the planet Uranus does in fact possess “a greater proportion of methane in its atmosphere than Jupiter and Saturn”, and this component “is largely responsible for the bluish-green appearance of the planet’s disc.”³²⁸ More importantly, the Uranian system possesses several characteristics unique in the Solar System, mostly derived from its extreme axial tilt of 98° , which make it an interesting and indeed ‘romantic’ planet in its own right.

First, the south pole of Uranus is perpetually ‘higher’ than its north pole. For this reason it has been called “the upside-down world.”³²⁹ Like a man looking for something under the sofa, Uranus’ anus is sticking up. Second, along one segment of its orbit, its south pole, or ‘rear end’, is pointed toward the Sun and inner planets; ‘mooning’ us, so to speak. The last directly rear view of Uranus—no pun intended—occurred in 1946, and will occur again in 2030.³³⁰ Third, and in contrast to this vulgar element, the five moons of Uranus are rather distinctive.³³¹ For as they revolve around their primary’s equator, their orbits are roughly perpendicular to the plane of the Ecliptic, rather than along the Ecliptic like the moons of the other planets.

Furthermore, the extreme axial tilt of Uranus means that its moons actually revolve around it in a retrograde direction. But with an interesting twist; for when Uranus’ south pole faces us, the moons revolve in a clockwise direction, but when its north pole does, they revolve in a counter-clockwise direction, thereby appearing to reverse course.³³² And fifth, from ancient times until the discovery of Uranus in 1781, Saturn was believed to be the outermost planet. Indeed, “Old Saturn had been considered as the frontier guard for such a long time that a certain degree of intellectual courage was needed to roll back the frontiers and mark them with a new world.” Thus, Uranus became the *new* outermost planet, replacing Saturn as “the frontier of the Solar System”.³³³

These elements can give us a better idea of what Piper intended for the planet Pantagruel. Like Uranus, it may have an extreme axial tilt, lending its moons a certain mystique among the people of Poictesme. Not just for their unusual orbits, but also “the charm of distance”.³³⁴ They are located at the opposite end of the Trisystem, three light-years away; and since the Poictesmeans have no hyperships (and haven’t since the end of the War forty years previously), Pantagruel’s unusual and romantic moons are inaccessible until the *Andromeda* is chartered at Storisende. As a gas giant, Pantagruel would naturally be an outer planet, placing it near the ‘frontier’ of the Gamma system. And Gamma Gartner itself is quite possibly at the very edge, or frontier, of the Terran Federation.

However, the uncouth elements of Rabelais’ giant mean that “the moons of Pantagruel” are not simply located at the *opposite* end of the Trisystem, they are also at its *rear* end. *The butt-end of the Galaxy*, or at least of the Federation.³³⁵ They are obliquely circling a giant surrounded by a dense cloud of his own methane gas, who may point his ‘butt’ at Gamma Gartner once every sidereal year—but at ‘the opposite end’ of his orbit, he sticks it out toward the vastness of the unknown cosmos, ‘mooning’ all of trans-Federation space.

In support of this rather bawdy scenario, the young Beam Piper enjoyed lewd and crude old Rabelais so much he practically forced Ferd Coleman to purchase a set of his works and read them too.³³⁶

Like Rabelais, William Shakespeare could also be vulgar, and it is known that Piper was a big fan of the Bard as well as Rabelais. He “loved how Shakespeare wrote both for the high-born *and the pit*”.³³⁷ This brings us to a final uniqueness regarding the moons of Uranus. For unlike the satellites of the other planets, all of which have Greco-Roman names, Herschel’s son John, also an astronomer, took his cue from Shakespeare. He named the two moons of Uranus, discovered by his father, after Puck’s fellow fairies (and superiors) in *A Midsummer Night’s Dream*; Queen Titania and King Oberon.³³⁸

Although in Rabelais, Panurge is a close associate of Pantagruel, he does not appear to be a giant. Thus, the planet Panurge, named for this “hard-partying jokester” could be the Gamma system’s parallel of Pluto. Its outermost planet, following a parallel off-kilter, drunken-like orbit. And since Panurge is Pantagruel’s partner in flatulence, the planet Panurge could be “a poison atmosphere planet, like Tubal-Cain.”³³⁹ Its noxious envelope and outermost position in Gamma would place Panurge, like Pantagruel, at ‘the butt-end of the Federation’, as well as the Trisystem.

Moreover, just as we found that Piper’s choice of the name *Andromeda* for the ship that travels to Panurge contains hidden meaning, “Panurge” itself also has significance. The factory that manufactured the parts for Merlin is located on the planet Panurge, and François Rabelais derived the name from the Greek *panourgos*, meaning “He who makes everything.”³⁴⁰

f) Where ‘The Mouth’ Meets ‘the Opposite End’

Beam’s joke doesn’t end there. For in Figure 3, the ouroboros is actually eating its own tail end, or ‘butt’. Alpha and Beta Gartner could then be the ‘eyes’ of the snake, with Gamma as the tail or butt-end being cosmically ingested close by. And guess what—even *this can be connected to Asimov*. Because when Bail Channis shows General Pritcher the location of Tazenda, which he claims is Star’s End, he points to an interesting cosmic feature along the edge of Pelot’s Nebula.

“This has been called ‘The Mouth’ by the inhabitants of that region of space. And that is significant because it is only from the Trantorian orientation that it looks like a mouth.” What he indicated was a rift in the body of the Nebula, shaped like a ragged, grinning mouth in profile, outlined by the glazing glory of the starlight with which it was filled.

“Follow ‘The Mouth’,” said Channis. “Follow ‘The Mouth’ towards the gullet as it narrows down to a thin, splintering line of light.”

Again the screen expanded a trifle, until the Nebula stretched away from ‘The Mouth’ to block off all the screen but that narrow trickle and Channis’ finger silently followed it down, to where it straggled to a halt, and then, as his finger continued moving onward, to a spot where one single star sparkled lonesomely; and there his finger halted, for beyond that was blackness, unrelieved.

“‘Star’s End’,” said the young man, simply. “The fabric of the Nebula is thin there and the light of that one star finds its way in just that one direction—to shine on Trantor.”³⁴¹

So Tazenda is not located precisely inside ‘The Mouth’, but a little bit further in. *Making it look as if ‘the opposite end’ (Star’s End) is in the process of being swallowed by Pelot’s Nebula.*

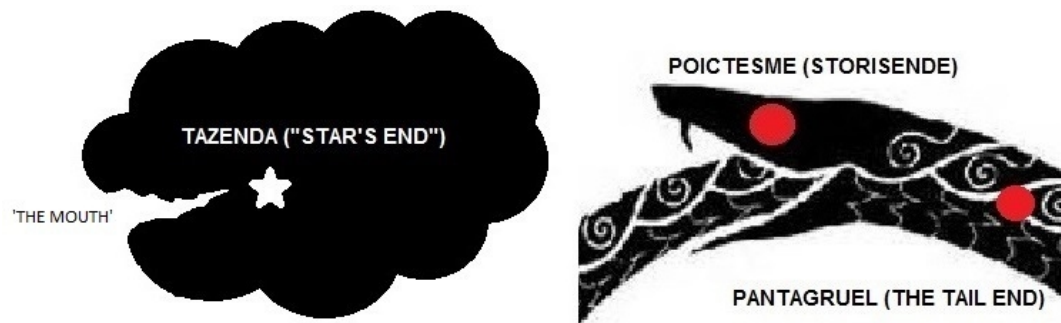


Figure 5. Pictorial representation of Pelot's Nebula and the Trisystem; in both of which 'The Mouth' meets "the opposite end".

Thus, Asimov himself was probably the inspiration of Piper's jest. After all, what is 'the opposite end' of a mouth, where food is ingested through the gullet? Why, the butt (or tail) end, where waste material is excreted through the anus! The "ragged, grinning mouth in profile" of Pelot's Nebula is paralleled by the grinning mouth of the serpent ouroboros, seen in profile.

Furthermore, notice Beam's genius. Not only did he cleverly make a joke about "the opposite end of the Galaxy", he did it by combining two of Asimov's phony Second Foundations—Tazenda ('The Mouth') and Terminus (a circle has no end)! And to cap it all, he even has Conn Maxwell allude to it. In rationalizing the complete lack of documentary evidence supporting the existence of Merlin (the hidden predictor, or 'second foundation'), Conn proclaims his Big Lie. "Systematic suppression, backed by the whole force of the Terran Federation. A gigantic conspiracy of silence!" He mentally adds, "Brother! *If they swallow that, I have it made; they'll swallow anything!*"³⁴²

Like stars and tails, perhaps? --On the other hand, Piper might have been talking about his own story.

Except for Wade Lucas, they do all swallow Conn's lie; paralleling how the Mule swallows Channis' lie that Tazenda (being swallowed by Pelot's Nebula) is the location of the Second Foundation. (And how we all swallowed Piper's Big Lie; see "**More Lies; Lies Without End**", below.)

35. Young Men Take Over the Search

Both Searches for the Hidden Predictor are taken over by young men in their twenties, whose real purpose is to not find the predictor at all.

Asimov. After General Han Pritcher fails to find the Second Foundation in five separate attempts, the Mule brings in Bail Channis, an Unconverted Kalganian "not quite thirty" years old, to take over his Search for the Second Foundation.³⁴³ But Channis has no intention of helping them find the Second Foundation, because he is secretly a Second Foundationer himself. Deceiving Pritcher and the Mule, Bail diverts them to Tazenda in order to protect Rossem, which he believes is the location. The Mule destroys Tazenda, and then, perceiving that Channis is lying, and through the superiority of his mental powers, he forces Channis to reveal the answer. This places the First Citizen within reach of his goal; the destruction of the Second Foundation on Rossem, which will finally enable him to complete his conquest of the Galaxy. However, Rossem is also not the answer; the First Speaker arrives and tells the Mule, "beyond [Rossem], you could not go", because "Channis himself was deceived", in order to protect the Second Foundation's true location.³⁴⁴

In a parallel fashion, Pelleas Anthon, "Twenty-nine" and another secret Second Foundationer, later takes the lead in the Search by the First Foundation. "We...tried to control the movement. We tried to join it."³⁴⁵ Anthon deceives Toran Darell and the other conspirators on Terminus, by first diverting their attention to Kalgan, and then manipulating them to conclude that the Second Foundation is right there on Terminus. This is also in order to protect the Second Foundation's true location, Trantor.³⁴⁶

Piper. Similarly, the Fawzi's Office Gang fails to find the Cosmic Computer, even after "studying about Merlin, and hunting for Merlin, all [their] lives."³⁴⁷ For that reason, they bring in a young man to take the

lead. They finance Conn Maxwell's education on Terra, but when he returns, now "twenty-three", he has no intention of helping them. That's because he secretly knows that the Cosmic Computer doesn't exist—he's been 'unconverted' from the planetwide belief in Merlin. First because Conn's own research into the Armed Forces Records on Terra fails to turn up a single mention of Merlin, let alone its location. And second by General Foxx Travis, who deceives him by denying the existence of any such computer. Indeed, Conn seemed to have doubts about Merlin even before travelling to Luna; he "was ashamed to admit [to Travis] anybody really believed in it."³⁴⁸

So Conn in turn deceives the Office Gang by telling them that Merlin exists. After taking them to Force Command Duplicate, where they fail to find the Cosmic Computer, he diverts their attention first to Barathrum Spaceport, and then to Koshchei; ostensibly to search for Merlin, but really in pursuit of his own goal—hyperships, which he believes will restore planetary prosperity. As we saw in (17.), however, to Conn and his father, the Search for Merlin is a fraud. Although technically he is the leader in looking for the Cosmic Computer, Conn later openly admits that "I'm not interested in building a new Merlin. I'm not even interested in the original Merlin."

When Klem Zareff states his belief that Wade Lucas is a Federation spy who is also searching for Merlin (which Klem thinks the Federation 'lost' after the War), Conn's reply is "Then why did he act the way he did at the meeting? All he did there was cut himself off from learning anything more from any of us. In his place, would you have done that? No; *you'd have tried to take the lead in hunting for Merlin yourself*. Now wouldn't you?" Conn could very well be talking about his own method, which Wade himself later describes as "You're smarter than I am, Conn. Instead of opposing them, you're guiding them."³⁴⁹

Notice that Conn and Wade are also talking about the methods of Bail Channis and Pelleas Anthon, who, instead of opposing the search for the Second Foundation, 'take the lead in hunting' for it, and thereby paradoxically 'guide them' in another direction—away from future predictor.

Thus, in addition to the young graduate Gaal Dornick, the young graduate Conn Maxwell also parallels the young Bail Channis, and to a lesser extent the young Pelleas Anthon. Although Anthon knows the real answer, both Bail and Conn are deceived as to the location of the hidden predictor. Bail believes the Second Foundation is on Rossem, but he was (voluntarily) deceived by its leader, the First Speaker on Trantor, capital of the old Empire. Conn believes Merlin 'has no location'—it doesn't exist—but he was (involuntarily) deceived by the former leader of Project Merlin on Terra, capital of the Old Federation.

Just as the name 'Conn' paralleled 'Gaal', we now notice an even more interesting connection; Conn, Bail. When you 'conn' somebody, sooner or later you probably get arrested, but of course you can get out on 'bail'.

The parallels this time:

	ASIMOV		PIPER
Character	Bail Channis	Pelleas Anthon	Conn Maxwell
Age	"not quite thirty"	"Twenty-nine"	"twenty-three"
Status	"unConverted Kalganian" (not controlled by the Mule; also a secret Second Foundationer)	student of Kleise, who investigated SF influence on Terminus; secretly a SFer himself	'unconverted' Poictesmean (mainly due to Foxx Travis, he is no longer controlled by belief in Merlin; a secret unbeliever)
Takes over	the Search for the Second Foundation (by the Mule)	the Search for the Second Foundation (by the First Foundation)	the Search for Merlin (Piper's hidden predictor, or 'second foundation')
Real purpose	to <i>not</i> find the Second Foundation	to <i>not</i> find the Second Foundation	not to find Merlin

Diverts Search	to Tazenda, then Rossem, which he was deceived by the First Speaker into believing is the location	to Kalgan, then Terminus, which he convincingly lies is the location	to Barathrum, then Koshchei, which he lyingly asserts may be the location of Merlin. But he was deceived by Foxx Travis, the first head of the Merlin Project
Result	Second Foundation is not found	Second Foundation is 'found' and 'destroyed', but really is neither found nor destroyed	Merlin found and almost destroyed; it will soon be 'destroyed' and lost again

Notice too that after Merlin is found, Conn Maxwell becomes the main programmer of the future-predicting supercomputer. That makes him Piper's version of a psychohistorian; Conn is now 'secretly a Second Foundationer', just like Bail Channis and Pelleas Anthor.

36. Parallel Searches for the Same Thing

In both Asimov and Piper, there are two parallel Searches for the same thing.

a) *Parallel Searches*

In Asimov, both Searches are for the Second Foundation, the hidden psychohistoric predictors. Part I of *Second Foundation* is 'Search by the Mule', and Part II is 'Search by the Foundation'. And in fact, both of these Searches are combined in the second half of the previous book, *Foundation and Empire*. After the Fall of the First Foundation to the Mule—from Chapter 9, Start of the Search, to Chapter 16, End of the Search—the Second Foundation is sought by a group of four people: Toran and Bayta Darell, Ebling Mis and Magnifico Giganticus. Bayta and Ebling are from the Foundation, Toran is from the Independent Trading worlds, and Magnifico is actually the Mule in disguise. Thus, the Second Foundation is sought by both the First Foundation *and* the Mule, at the same time.

In *The Cosmic Computer*, there are also two parallel Searches. The first is for Merlin, the hidden psychohistoric predictor, who is sought by Kurt Fawzi and his Office Gang in order to solve all their problems. Using that Search as a cover for their own, Conn and Rodney Maxwell conduct what can be called the 'Search for Hyperships', which they will use to restore planetary prosperity. But Rodney Maxwell cautions his son against being overeager. "Let Kurt Fawzi and Klem Zareff and the rest of them have this duplicate Force Command thing first, though. Keep them happy. As soon as they have that opened, you can take a gang and run over to Barathrum and grab your spaceport. Wait till they find out that Merlin isn't at Force Command Duplicate. Then you can convince them it's really on Koshchei." ³⁵⁰

Thus, the Search for Hyperships takes a temporary back seat to the Search for Merlin. And then the Maxwells encounter more roadblocks. Securing Barathrum Spaceport entails taking on the Blackie Perales Gang, which puts up a stiff fight before being defeated. They then discover that the spaceport is totally devoid of spaceships, so the Maxwells are forced to finish converting the contragravity airliner *Harriet Barne* into an interplanetary ship. But when Conn finally gets to Koshchei, he doesn't even pretend to look for Merlin; instead, he resumes his Search for Hyperships, and succeeds—sort of. Paralleling the gutted *Harriet Barne*, Conn only finds the shell of a hypership at Port Carpenter, forcing his group to tackle the job of completing it. Meanwhile, an exploratory subgroup discovers "over a thousand" normal-spaceships at Sickle Mountain Naval Observatory, "and here and there a thousand-footer that could have been converted into a hypership if anybody had wanted to take the trouble." ³⁵¹ When the 'shell' hypership is finally completed, it is dubbed the *Ouroboros II*, and its maiden voyage takes it to Poictesme, where the Search for Merlin soon after finally succeeds. ³⁵²

Since both Searches go on simultaneously, and indeed begin and end at almost the same time, the Search for Hyperships to restore planetary prosperity therefore parallels the Search for Merlin to solve all of Poictesme's problems. The question is, if these are modeled on the parallel Searches for the Second Foundation in Asimov, *are the Maxwells and Fawzi's Office Gang actually looking for the same thing?*

In *The Cosmic Computer*, both Searches are in fact closely related. Prosperity requires hyperships; solutions require Merlin. And there are several instances of a Merlin-hypership connection. After the first private meeting in Kurt Fawzi's office, the Office Gang holds a larger meeting "at the Academy". Here, the men organize the Search for Merlin under cover of another salvage operation. While their focus is on Merlin, "Conn paid less and less attention...[he] sat and doodled with his six-color pen, *mostly spherical hyperspace ships*." ³⁵³ And later, when Kurt Fawzi becomes convinced that Conn isn't looking for Merlin at all (which is true), Conn counters with "If we want prosperity, we need tools. Our problem is loss of markets. If we find Merlin, and tape it with everything that's happened in the forty years since it was shut down, Merlin will tell us where to find new markets. But the markets won't come to us. We'll have to do our own exporting, and we'll need ships... *You find Merlin, and we'll have the ships ready when you do find it.*" ³⁵⁴ Conn has it just about right, for as we've seen, the first new hypership lands on Poictesme just before Kurt finds Merlin.

Thus, the Search for Merlin, the Search for Hyperships; hyperships 'found' (completed), Merlin found. Planetary prosperity is regained, and all their problems are solved. But if the two Searches were really after the same thing, then the Cosmic Computer should be contained within a (buried) hypership, and is quite possibly the vessel's operating system.

Assuming this line of reasoning is correct, then we've discovered another Asimov parallel in Piper; the

b) Escape of the Hypership Brains

Both authors put their Brains into hyperships, which then 'escape'.

Asimov. This element takes us outside the Foundation series and into Asimov's Robot series; but as we've seen, in *The Cosmic Computer* Piper was also modeling Isaac's robotic concepts. And in Isaac's story "Escape!" (also called "Paradoxical Escape"), which first appeared in the August 1945 issue of *Astounding*, "The Brain" is a positronic computer operating a hypership. It's not actually on board the ship, for The Brain is the Earth-bound master positronic computer of U.S. Robot and Mechanical Men, Inc. (USR), which is tasked by its human masters with building and operating the first hyperspace ship. This task, however, presents a dilemma for The Brain's positronic circuits, because throwing human beings through hyperspace causes them to temporarily 'die' (cease to exist in this universe), which seems to violate the Three Laws of Robotics. ³⁵⁵ These require that robots may not harm a human being, or allow a human being to come to harm.

The 'escape' of the title is twofold. First, the development of hyperdrive means that human beings can now escape their own solar system and travel to other stars. Second, The Brain escapes the dilemma of violating the Three Laws by developing a sense of humor. It actually becomes a practical joker, but the paradox is that its 'jokes' cause mental anguish, or *non-physical* harm, to the pilots of the first hypership, as well as the leaders of USR. ³⁵⁶

Piper. In "Graveyard of Dreams", the original version of *The Cosmic Computer*, Merlin is called "the Brain". ³⁵⁷ This is therefore very interesting, because in addition to telling Jerry Pournelle that Merlin relocates to Gilgamesh, Beam reportedly also said that *it is actually the Brain of a hypership*. And Piper has Conn make a point of saying that "Spaceships, either interplanetary or interstellar, were always spherical with a pseudogravity system at the center." ³⁵⁸ Thus, even a small, normal-space ship would be able to transport Merlin, because "the average interplanetary ship isn't very big; five hundred to seven-fifty feet in diameter." And such a ship could be docked within a hyperspace vessel, which are much larger. For example, in *Space Viking* the *Nemesis* is a "two thousand foot globe", which can carry four 200-foot globular pinnacles in addition to all its normal decks and workspaces. ³⁵⁹

If Merlin can be moved to Gilgamesh in the first place, it would make sense that it is already inside some sort of spacecraft. And there is something very odd about the site of Force Command and Merlin. "Fifty-two years before, they had come to the mesa in the Badlands and dug a pit on top of it, *a thousand feet in diameter and more than five hundred deep*, and in it they built a duplicate of the headquarters for Third Fleet-Army Force Command. They built a shaft a hundred feet in diameter like a chimney at one side, and they ran a tunnel out through solid rock to the head of a canyon half a mile away. Then they buried the whole thing." ³⁶⁰

That the pit is “more than five hundred [feet] deep” implies that a 500-foot ship could actually be buried there. This begs the question; the parts for Merlin are manufactured on Panurge. Were they shipped to Poictesme and then assembled, or were they *assembled into a ship and then flown* to Poictesme? The latter would parallel *The Thing*, an interplanetary ship built around a collapsium cutter, and flown from Koshchei to Poictesme.

Another oddity is mentioned by former Alliance officer Klem Zareff. Before he goes there or even knows where it is, Klem says that “this underground headquarters would be the safest place on the planet; they’d make sure of that. Staff brass don’t like to be caught out in the rain, not when it’s raining hellburners and planet-busters.”³⁶¹ However, “If the Third Force High Command was expecting to sit out a nuclear bombardment in this place,” then why in the world did they build their duplicate headquarters near the *top* of a mesa, under only fifty to a hundred feet of “loose rubble”?³⁶² Shouldn’t they have built it deeper inside, or even at the bottom, under solid rock? *The Cosmic Computer* was published in 1963, and in May 1961, construction began on the new underground headquarters of NORAD, which was built inside Cheyenne Mountain—*near the bottom, under more than 2000 feet of granite*.³⁶³

Even granting that Force Command is protected by a layer of collapsium, it would only take one near-miss nuke to strip away the loose rubble, exposing this ‘top secret’ facility to more direct attack.

c) Connecting Force Command and Barathrum

By its strange location, Piper seems to have deliberately made Force Command sound similar to the very next installation LE&S takes over—Barathrum Spaceport. Conn reveals that the Spaceport was built “inside the crater of an extinct volcano.”³⁶⁴ *Near the top*, just as at Force Command. The crater “was ringed, outside, with launching-sites and gun positions...The ship docks and shops were down on the level of the crater floor, in caverns, both natural and excavated, that extended far back into the mountain. There were two galleries, one above the other, extending entirely around the inside of the crater near the top; passages from them gave access to the outside gun and missile positions.”³⁶⁵

Being located in a volcanic crater, the shape of Barathrum Spaceport is circular, and Force Command Duplicate “was built in concentric circles, level above level”, including “Storerooms, mile on circular mile of them.”³⁶⁶ Although concentric means that they have the same center, the levels of Force Command are not necessarily the same diameter; the circles may progressively become larger or smaller, as in the crater of Barathrum—or in a spherical spaceship. And in fact, “The next level up was much smaller. Here were the offices of the top echelons of the Force Command Staff.”³⁶⁷

Moreover, when they first enter Force Command, Conn Maxwell and the others do so through the lateral tunnel, rather than from the top through the vertical chimney;³⁶⁸ a process they repeat at Barathrum Spaceport. “The principal entrance, the front door of the spaceport, was the crater of the extinct volcano itself...How many outlaws there were to man [the gun positions and missile launching sites around it] was a question a lot of people could get killed trying to answer...There was another way in...It was a tunnel two miles long, running into some of the bottom workshops and storerooms back of the ship berths from a big blowhole or small crater at the foot of the mountain.”³⁶⁹

Beam even directly connects the mesa and volcano, a couple of times. When Conn says that “We ought to nail that spaceport down first”, Klem Zareff counters with a quote that essentially says, ‘we should nail down Force Command first.’³⁷⁰ And when they finally approach the spaceport, they observe that “Except for the seabirds that nested among the cliffs and the few thin patches of green where seeds windblown had taken root, it was...lifeless...Barathrum was a dead Inferno...by comparison, [Force Command in] the Badlands seemed lushly fertile.”³⁷¹ Nevertheless, the not-quite total barrenness of Barathrum closely parallels the geography around Force Command, which is a “desert” of “windblown sand” where only “Wiregrass sprouted, and thorn-bush grew”. Its animal life is similarly scarce. “Little things not unlike rabbits scampered over it, and bigger things, vaguely foxlike, hunted them.”³⁷²

However, there are major discrepancies between topographic reality and Beam’s descriptions of the lateral tunnels leading into Force Command and Barathrum. In the case of Force Command, my impression has always been that the lateral tunnel lies at the base of the mesa, like that into Barathrum. But that would mean the mesa is less than 600 feet high (the pit at the center being “more than five hundred” deep), whereas my mental image has it more like Devil’s Tower in Wyoming (1267 feet). —Or even higher, since Beam says that there are several “high buttes in the neighborhood.”³⁷³

In the case of Barathrum, Piper states that its crater is “seven miles around...and a mile deep”. He even repeats the latter figure; “the mile-deep crater.” But since the lateral tunnel at the base of the volcano leads to the floor of the crater, this means Barathrum is only about a mile high; 5280 feet. That cannot be right, because Barathrum is huge. “[D]warfing everything around it...It was so huge that it was hard to realize that the humbled foothills around it were themselves respectably lofty mountains.”³⁷⁴ To me, this implies that Barathrum is more like *three* miles high, or somewhere around 16,000 feet, while its lofty ‘foothills’ are about five thousand feet, or one mile, high.

Unless I’m missing something, Piper’s descriptions don’t add up, as if he were deliberately ‘blurring’ the differences between Force Command and Barathrum, in order to subtly connect the two. So now, let’s do a little comparison of our own. First, with Force Command at the top of a 2,400-foot mesa, and Barathrum as a three-mile high volcano with a one-mile deep crater, and mile-high ‘foothills’. I gave the empty spaceport a couple of landed ships (1000- and 1500-footers) for scale.

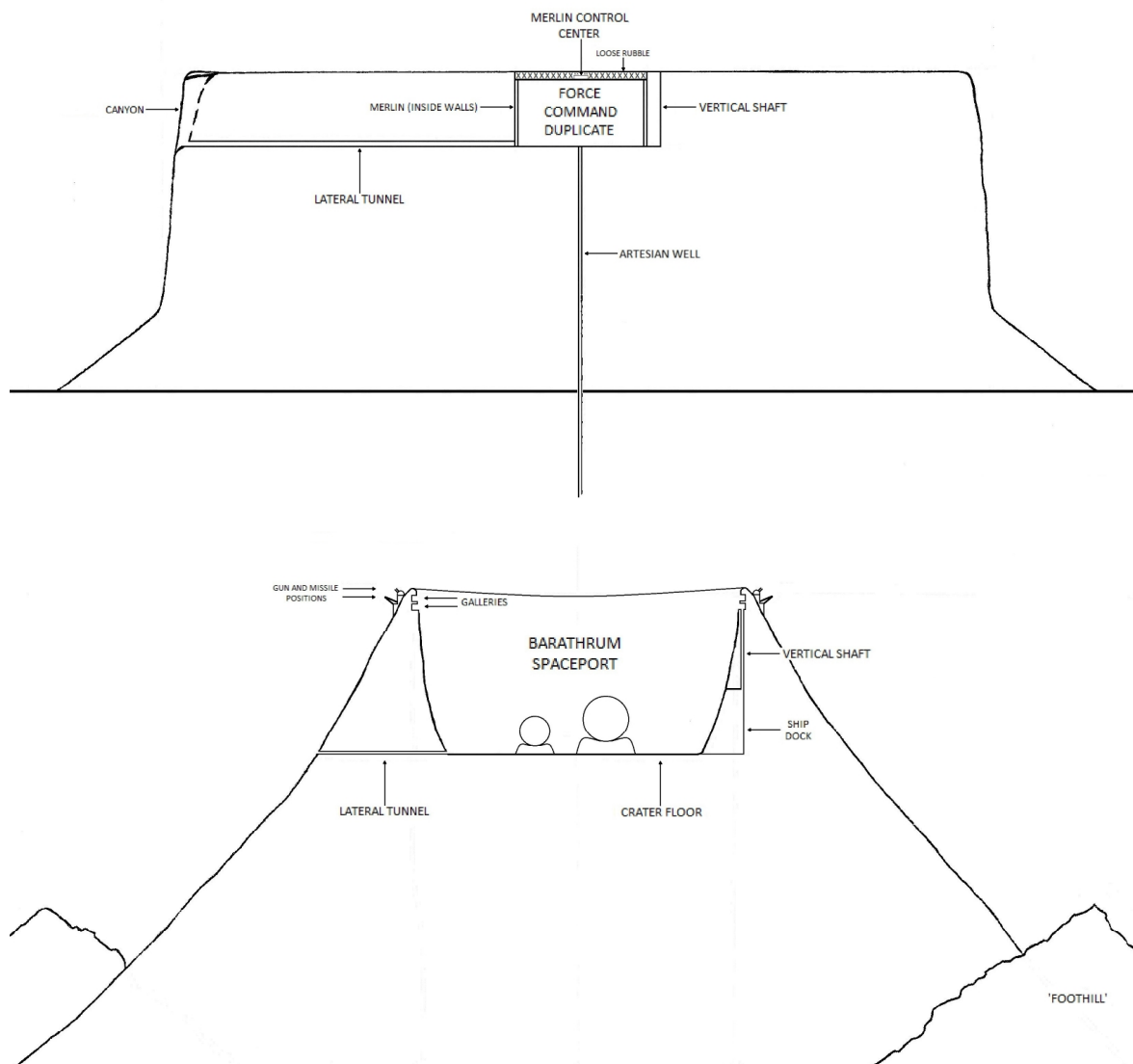


Figure 6. Schematics of Force Command Duplicate and Barathrum Spaceport, located near the top of their respective landforms.

In Figure 6 above, notice that the lateral tunnels into Force Command and Barathrum cannot be at ground level. This is not a major problem, since the men of Litchfield Exploration & Salvage can enter via contragravity vehicles. Perhaps my impression from the story is wrong. However, a problem does occur with the lateral tunnel into Barathrum, which isn't two miles long as Piper says, but less than one.

This suggests that the crater of Barathrum must be much deeper than Beam says it is. So for our second pair of cross-sections, we'll depict the tunnels at ground level. (Figure 7.) Force Command Duplicate would then be located in a much lower mesa (about 550-600 feet high), and Barathrum's crater is three miles deep, rather than the one mile depth specified by Beam.

As seen in Figure 7 below, this version feels closer to Piper's true intent. The lateral tunnel into Barathrum is two miles long, and runs into the natural and excavated caverns Conn encounters, prior to the passageway "almost as wide as the Mall in Litchfield", that "ran straight out to the ship docks and the open crater beyond."³⁷⁵

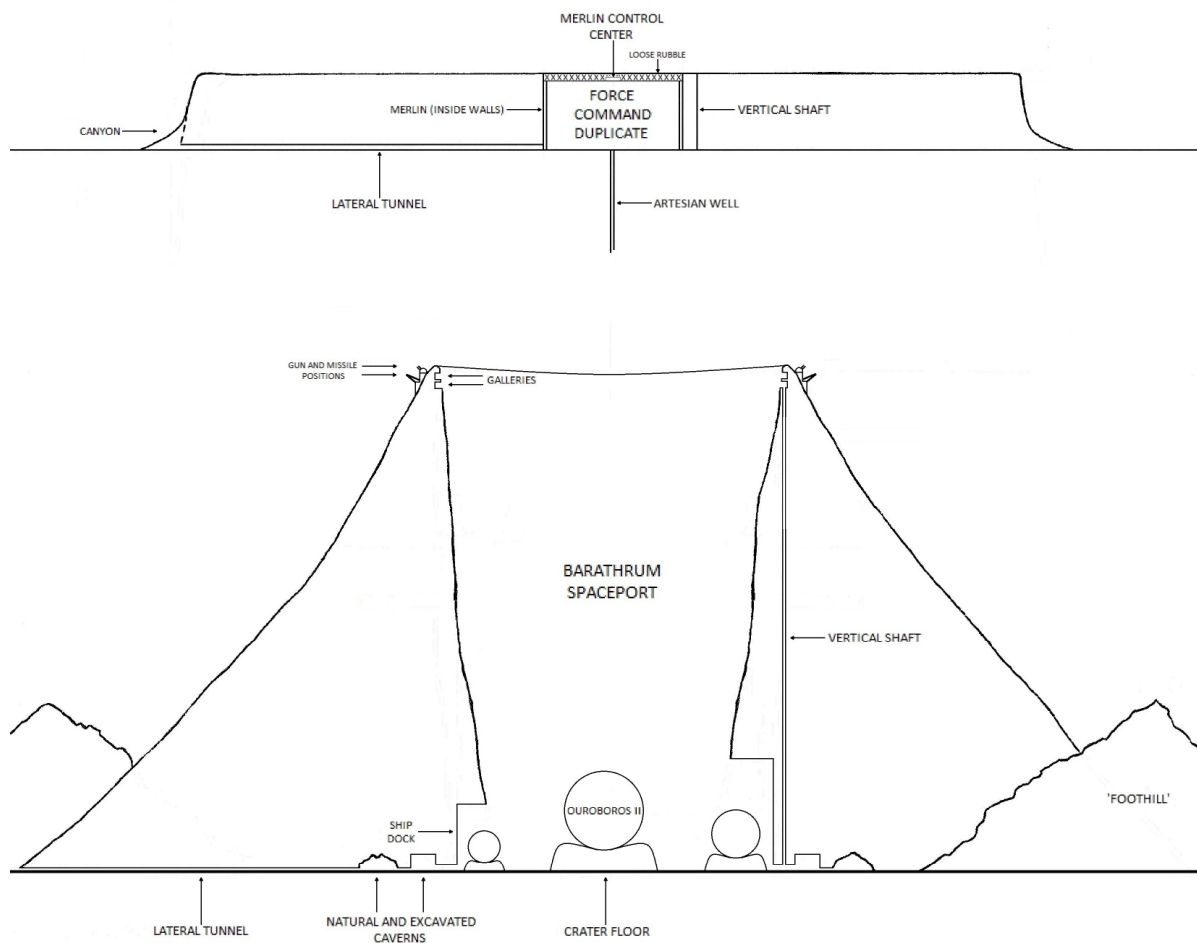


Figure 7. Schematics of Force Command and Barathrum Spaceport, located near the bottom of their respective landforms.

The crater at the top of Barathrum is 7 miles around, so using the equation $C = \pi \times d$ (circumference equals pi times the diameter), we find that it is about 2.228 miles across. The crater floor below should be narrower than the rim, yet when Conn circles around to the vertical shaft, he says it is "almost three and a half miles" to the other side! That may mean the crater floor is not a perfect circle, but the ship docks, excavated into the volcano's interior walls, probably make up the difference. Because prior to

ascending the vertical shaft, Conn comes to “vast caves a mile high and open to the crater”.³⁷⁶ These I presume are docks, though why they are a mile high is anyone’s guess; that would make them as high as the “foothill” in the illustration. I have therefore drawn the one on the right only 3/4 of a mile high; large enough to accommodate the 2500-foot *Ouroboros II*, added to the schematic for scale.³⁷⁷

Incidentally, the reference to mile-high caves seems to confirm the deduction that Barathrum’s crater cannot be merely a mile deep. In any case, the evidence suggests that Force Command Duplicate was built in what amounts to a *spaceport* pit. Its single chimney-like vertical shaft, beside paralleling the vertical shaft at Barathrum Spaceport, also parallels those seen on the planet Fenris, where the only things visible about Port Sandor are “a few shaft-head domes here and there [covering vertical shafts], and the landing pit of the spaceport.”³⁷⁸

This creates an ironic situation entirely typical of Piper. Conn Maxwell doesn’t find a spaceship at Force Command, but actually one is there (although he doesn’t realize it); and he hopes to find a spaceship at Barathrum, but there isn’t one there (though the *Harriet Barne* has been partially converted)!

d) The Shape of Merlin and His Spaceship

The next question is the shape of the deduced spaceship Merlin is the Brain of. It could be a standard spherical ship, like those in all of Beam’s stories. The office of General Travis is at the top of Force Command; this seems consistent with hyperships in *Space Viking*, where “the officer’s country [is] north of the engine rooms”, the engine rooms being at the center of the sphere.³⁷⁹ Since the pit Force Command was built in is “more than five hundred feet deep”, the secret headquarters could be inside a 500-foot interplanetary ship.

However, the pit is also “a thousand feet in diameter”, which seems much too wide—there would be a 250-foot gap all around a spherical ship—and instead of being located at the center, Force Command’s power plant is “at the extreme bottom.”³⁸⁰ Moreover, with its concentric circles, Force Command seems more like a short cylinder, or shaped like a drum. At least, my impression has always been that it’s a larger-scale version of the controls of Merlin, which are located in a “drum-shaped superstructure” “directly over what used to be Foxx Travis’ office.”³⁸¹ A little drum on a big drum.

So, is Force Command Duplicate a drum-shaped spacecraft, 1000 feet wide by 500 high? That sounds highly unlikely; and yet, Beam includes several strange-looking spaceships in the story. The strangest is *The Thing*, a case which will be examined below. But the odd spaceships really start with the *Harriet Barne*, which is a contragravity airliner that “originally resembled a huge submarine”, but when converted for use in space stands on its end and flies “just like one of the old rocket ships before the Abbott drive was developed.”³⁸² Assuming that Force Command’s concentric circles are not all the same diameter, it could be shaped like a rocket.

The *Harriet Barne* is followed by a spaceship which is being built by taking “four old freighters off Mothball Row, and they’re tearing them down and cannibalizing them into one”. It turns out to be “of cruciform design, like an old-fashioned pre-contragravity winged airplane. The design puzzled everybody at Barathrum. Yves Jacquemont thought that perhaps there would be decks in the cross-arm which would be used when the ship was running on combined lift and drive.”³⁸³

And a third is constructed by “demolishing a block of empty buildings to get girders” “for a real [spherical] spaceship.”³⁸⁴ This prompts Conn to state, “Well, till we can get a shipyard going on Koshchei and build some real spaceships, there are going to be some rare-looking objects traveling around the Alpha System. *I wonder what the next one’s going to look like—a flying skyscraper?*”³⁸⁵

Merlin could therefore be the Brain of what is, essentially, a flying skyscraper. “The walls, the fifty-foot walls, shielded inside and out. Merlin—the circuitry, the memory-bank, the relays, everything—was installed inside them.”³⁸⁶ Thus, these collapsium-plated ‘walls’ could actually be *hulls*. And, just as Merlin’s controls were concealed at the top of Force Command, there could be engines concealed at the bottom, beneath the power plant. Including “Abbott lift-and-drive, Dillingham hyperdrives, pseudograv... converters, everything.”³⁸⁷ These hidden engines wouldn’t appear on Conn’s blueprints, any more than Merlin and its control-room did.

With engines at the bottom, the levels of Force Command would become decks, as in a rocket. The whole of Force Command Duplicate lifting out of the mesa wouldn’t be a problem, because it was buried under a hundred feet of “loose rubble”. Another oddity, for unlike the vertical and lateral shafts, the top layer directly above the headquarters was not vitrified solid. Perhaps we now know why.

Assuming that Force Command Duplicate is a squat cylinder and/or rocket, then Merlin has a very interesting shape. Seen from above, the fifty-foot walls around the 900-foot wide headquarters *would be a circle*. Thus, the Cosmic Computer itself is 'a circle that has no end', echoing the *Ouroboros*—a *second* clue that Piper's Second Foundation, Merlin, is located on Poictesme, his 'foundation' planet. (Figure 8.) As we've seen, the ouroboros is a logical symbol; that is, a *psychological* construct representing the idea "a circle has no end." And although they don't realize it at first, Beam's characters find Merlin by actually locating a *physical* circle. This mental/physical duality parallels how the Second Foundation (the psychological nucleus) was physically 'found' on Terminus (the physical nucleus) by the psychological clue "a circle has no end."³⁸⁸

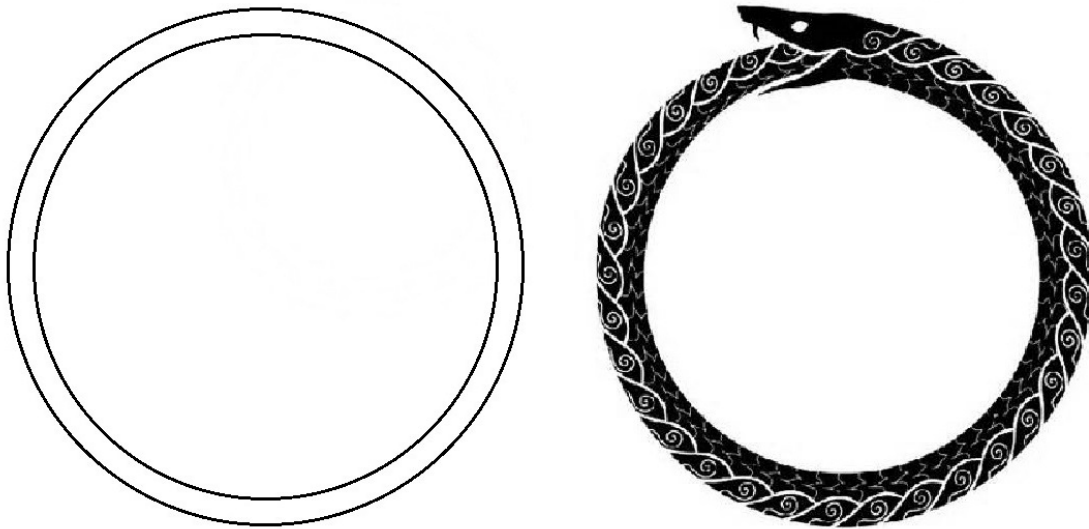


Figure 8. Merlin's shape as the outer 50 feet of a 1000-foot cylinder, and the ouroboros. Two 'foundations', two unending circles; one physical, the other psychological.

But even if we discount the spherical or cylindrical options, Merlin could be transferred to Gilgamesh via an *ad hoc* spaceship. Because it is interesting that Conn's mother, Mrs. Maxwell, "won't say Merlin, she always calls it 'that thing.'"³⁸⁹ And later in the novel, *The Thing* is a hastily-assembled interplanetary spaceship bringing a collapsium cutter from Koshchei to Poictesme, in order to open Merlin. "I get you, Conn. We won't put the things in a ship, we'll build a ship around them."³⁹⁰ This example once again connects Merlin with spaceships, and not just by clever allusion. *The Thing* comes from another world and hovers over 'that thing' (Merlin), cutting it open. But spaceships travel both ways, so something like *The Thing* could later be used to haul 'that thing' away to another world. In addition, the collapsium cutter cannot "be damaged by space radiation or re-entry heat", so it is hauled open into space.³⁹¹ Since Merlin is protected by inner and outer layers of collapsium, it too could be transported in that manner.

If we needed any more evidence, in "Graveyard of Dreams", the Brain is also called "the Third Fleet-Army Force Brain".³⁹² As the secret Brain of the whole Third Fleet-Army Force, this means that Merlin should not only be located in its secret headquarters; it should also be located in its secret flagship.

Thus, if Poictesme had come under space-attack from forces of the System States Alliance, the buried spaceship (whether hyper-, normal-space, cylindrical, or *ad hoc*) with Merlin aboard could have left the planet for a safer location. A mobile Brain would make perfect sense; you wouldn't want your top secret strategic battle computer—which, as it turns out, enables you to decisively win the War—to fall into the hands of the enemy. Pre-planned mobility would also be cheaper and easier than building another Merlin on Panurge, a possibility discussed previously. On the bridge of the fleeing ship could have been General Foxx Travis, Third-Fleet-Army Force commander, making this 'duplicate' ship (and Merlin) the new *actual* flagship. Alternately, Travis could have delegated the task to one of his trusted captains, such as his aide-de-camp, the then-Captain Mike Shanlee. (See next section.)

Although this scenario didn't happen during the System States War, it could happen later, when the Merlin Plan fails, and Poictesme undergoes a period of planetary nuclear civil war and aggressor planet's invasion. Assuming Merlin leaves Poictesme at that time, it then 'escapes' the carnage of these new Interstellar Wars to find a more secure site.

Merlin's physical escape to another planet would make it a truly 'cosmic' (star-traveling) computer, and would also tie in the interstellar spaceflight in Asimov's story "Escape". It may even be a "Paradoxical Escape". Because as we saw in (27.), the people fleeing Poictesme probably fake the destruction of Merlin, in order to escape—if your enemies think you're dead, they won't follow you—but also to regain the secrecy needed to begin planning the future of Terro-Humanity again. The paradox would be, 'In order to save Merlin, we must destroy it.' But this would really be a ruse, a fake destruction or 'temporary death' that allows the Cosmic Computer to continue the Merlin Plan elsewhere.

There is a 'paradoxical escape' in *The Cosmic Computer*, too. By building hyperships and finding Merlin, Conn Maxwell and Kurt Fawzi restore the Poictesmeans to planetary prosperity; they 'escape' from poverty (and believe they will escape the fall of the Federation). But as we have seen, the paradox is that Conn and Kurt were actually looking for the same thing, all along.

37. Parallel Foxes, Plots, Miniature Nukes, Failures and Conversions

In both stories, a former military officer is sent in disguise by a 'Fox' on a suicide mission to destroy the main threat with a miniature nuclear weapon. He fails, and is then converted to the service of the threat.

a) *Parallel Foxes Send Miniature Nuclear Weapons*

Asimov. This takes us into *Foundation and Empire*, where the Mule derails the Seldon Plan, and conquers the First Foundation itself. Captain of the Fleet Han Pritcher is a Foundation officer whose "work consisted largely of what the War Department called "intelligence," the sophisticated, "espionage," and the romanticists, "spy stuff." " His warnings about the threat of the Mule went unheeded by the former leaders of the Foundation, so Pritcher goes underground, grows "a beard of russet intensity" for disguise, and joins a secret rebel group. This group is headed by someone known only as "the Fox". The Fox vaguely recognizes his guest. "I once saw you. I'm trying to remember, and the beard is definitely out of the picture." After revealing his name, Pritcher is given the alias of Shield-man Lo Moro.³⁹³

The Fox sends Moro/Pritcher to destroy the Mule, who has taken up residence in the Mayor's palace after his conquest. The Mule's death will be accomplished with a miniature nuclear weapon; a "tiny atomic bomb under his tongue." The mission is thus suicidal, because Pritcher plans to get in close proximity to the Mule, and the detonation will kill both men. "The Mule had five minutes to live-- So had Captain Pritcher...When the bomb went, the palace would go with it—all the palace."³⁹⁴

Any of this sound familiar?

Piper. As the former aide-de-camp of General Foxx Travis, General Mike Shanlee was Travis' number-two man on Poictesme, and his rank was probably 'Captain' during the System States War. This parallels Travis himself, who in "Oomphel in the Sky" is a young captain and the aide-de-camp of General Maith. "There was another officer with him, considerably younger—Captain Foxx Travis, Major-General Maith's aide."³⁹⁵ "Considerably younger" parallels the words Conn uses to describe Mike Shanlee as he saw him on Luna, in relation to the 112-year old Travis. "There had been a younger man, a mere stripling of seventy-odd", and later, "Oh yes. The comparative youngster of seventy-some—" ³⁹⁶

During the War, Captain Shanlee undoubtedly had one of "the offices of the top echelons of the Force Command Staff"; another one is "the Chief of Intelligence's office". ³⁹⁷ It is at this time that the Cosmic Computer predicts the end of the Terran Federation, and therefore Merlin itself becomes a huge threat to the Federation. For if the Awful Truth becomes known, the Federation will disintegrate immediately and violently. (See **Disclosure Catastrophic**, above.) Thus, General Travis, Captain Shanlee, the Chief of Intelligence and their colleagues form a conspiracy to deal with this threat. "We just sealed it. There were fewer than a hundred of us who knew about it. We all took an oath of secrecy. We spent the rest of our lives trying to suppress any mention of Merlin or the Merlin Project." The conspirators considered destroying Merlin, but "We'd built it; we'd worked with it...We couldn't. Besides, there was a chance that it might survive the Federation; when a new civilization arose it would be useful." ³⁹⁸

But forty years later, when Travis learns from Conn Maxwell that the people of Poictesme still talk about Merlin, and even hope to find and use it to solve their problems, the threat to the Federation is renewed. The man named 'Foxx' by his parents (quite possibly because he was born with red hair), sends Captain Shanlee, now a General, on a clandestine mission to destroy Merlin on Poictesme, Piper's 'foundation' planet. On the way, Mike grows a "beard and...pageboy bob" for disguise, and adopts the alias of Carl Leibert. But the disguise is not perfect; Conn Maxwell recognizes him. "Conn...[had] seen this Carl Leibert before, somewhere, and somehow he was sure that the long white hair and the untrimmed beard weren't part of the picture."³⁹⁹

The Federation's plot to destroy Merlin involves a miniature nuclear weapon; a "Vest-pocket thermonuclear." The mission is therefore suicidal, as Shanlee plans to blow himself up along with Merlin. Tom Brangwyn says, "And you know how it was to be fired? With a regular 40-mm flare pistol, welded onto the end of the bomb...the only way he could have fired the bomb would have been by pulling the trigger." To which Conn mentally replies, "And blowing himself up along with it. He must have wanted Merlin destroyed pretty badly."⁴⁰⁰ Although Piper does not specify, the thermonuclear detonation should destroy most if not all of the mesa along with Merlin and Force Command Duplicate.

And that's not all of the parallels, because

b) Both Plots Fail, Both Officers Switch Sides

Both Fox-directed plots fail, and both military officers then switch sides, joining forces with the threat.

Pritcher's plot fails, because the Mule—the mutant who 'destroyed' the First Foundation, and threatens to do the same to the Second—is not in the Mayor's palace as expected. In his place, Han finds the former Warlord of Kalgan, now Viceroy of Terminus. And due to the Mule's "efficient counter-espionage system", the miniature nuclear device itself was rendered harmless before Pritcher even got it. The plot was allowed to continue so that the naturally-gifted but often passed-over Captain could be captured and taken before the Mule, who then Converts Pritcher to obedience.⁴⁰¹

In the Mule's service, the erstwhile Captain becomes "the most useful" of the Converted, and is eventually promoted to *General* Han Pritcher. Indeed, after the Second Foundation begins systematically tampering with the Mule's highest-ranking henchmen, Han is "the best man left"; his number-two, and after the Mule's death five years later, General Pritcher succeeds him as First Citizen, and even lays siege to Terminus in an attempt to keep his "Union of Worlds" together.⁴⁰²

General Shanlee's plot also fails, because after breaking free from his captors, Sylvie Jacquemont fells him with a chair, preventing him from returning to his room and setting off the miniature nuke. But when Merlin (the machine which threatens to destroy the Second Federation) defuses his own danger by acknowledging the need for "*Falsification*", General Shanlee switches sides, and joins forces with Merlin and the Poictesmeans. "Shanlee...had stayed on Poictesme as nominal head of Project Merlin, and intended to remain there for the rest of his life."⁴⁰³ This means that Shanlee is the 'first human' under Merlin; the Cosmic Computer's (nominal) second in command.

To summarize the two men,

Captain Han Pritcher is a former Foundation Intelligence officer sent in bearded disguise by "the Fox" on a clandestine suicide mission to infiltrate the Mayor's palace on Terminus and destroy the Mule with a miniature nuclear weapon. He fails, is then Converted by the Mule, and quickly becomes a General in his service. Eventually his number-two man, upon the Mule's death Pritcher succeeds him as First Citizen.

General Mike Shanlee is a former Federation officer stationed on Poictesme; General Travis' aide or number-two man, probably a Captain during the System States War and closely associated with the Third Fleet-Army Force's Chief of Intelligence. Shanlee is later sent in bearded disguise (as a preacher) by Foxx Travis on a clandestine suicide mission to infiltrate Force Command Duplicate on Poictesme and destroy Merlin with a miniature nuclear weapon. He fails, and is then 'converted' to the service of Merlin. Indeed, as the "nominal head of Project Merlin" for the rest of his life, Shanlee becomes second in importance only to the Cosmic Computer. He can therefore be called the 'first human' under Merlin.

c) A 'Pritcher' in Disguise

Yet again, Beam's version is an improvement on Asimov, and in several ways. Using a tactical nuke to kill one man, as in Asimov, seems like overkill; what we would call 'terminate with extreme prejudice'. Pritcher's mission may even be unnecessary, because the Mule neither needs nor has any physical defenses. With the connivance of *a single guard*, Han walks right into the palace! "Pritcher knew that over the square miles of palace grounds, there was not one guard, not one soldier; not one armed man. The Mule had need of no protection. The Mule was his own best, all-powerful protector."⁴⁰⁴

Well, I beg to differ, for even though he was privy to Pritcher's plot, the Mule cannot control *everyone*. Moreover, he must sleep sometime, and I question whether the Mule can detect an emotional threat while unconscious. Indeed, that may partly explain why Pritcher's mission is undertaken at night, but doesn't address *why* assassinating the Mule is so difficult. Even granting his efficient counter-espionage system, it seems to me that you wouldn't need a miniature nuke—a standard-size nuke *fired from a distance* could do the job, with little or no risk to Pritcher. Particularly because the Mule's mental powers cannot possibly stop such physical devices, and moreover must be limited in range.⁴⁰⁵

On the other hand, using a tactical nuke to 'kill' Merlin, as in Piper, makes more sense, because Merlin is not a man, but a very large machine buried in a mesa, and further protected by a layer of collapsium. To insure that the Cosmic Computer is completely destroyed, a high-yield weapon would indeed be necessary, as would detonating it from inside. Yet the device must be small enough for Shanlee to be able to infiltrate it past Merlin's physical defenses. And that's precisely why he needs a disguise; to get past Klem Zareff's guards and combat contragravity that control the mesa and surrounding area.⁴⁰⁶

Isaac's use of the word "Conversion" implies that the Mule's emotional control involves locking people like Han Pritcher into a religious level of devotion to himself. In Pritcher's case, this replaces his earlier devotion to the Foundation, which is described as pseudo-religious. His repeated attempts to warn the Mayor that the Mule is a serious threat are rebuffed, but Pritcher doesn't give up, even though it gets him into trouble repeatedly. "He had withstood an eternal rain of black marks and official reprimands, and survived it. And stubbornly he had held to his own way in the firm belief that insubordination in that same holy "interest of the State" would yet be recognized for the service it was."⁴⁰⁷

Piper parallels this "holy" aspect of Han Pritcher by portraying Mike Shanlee as a religious figure, and in two ways. First, his devotion to the Federation is a matter of deep faith. "Remember, we were Federation officers. *The Federation was our religion*. Like patriotism used to be, back in the days of nationalism."⁴⁰⁸ And second of course is Shanlee's disguise as the preacher Carl Leibert, the so-called Prophet of Merlin.

But why did Piper make him a clergyman; why didn't he have the General sneak into Force Command as something else, such as a guard-captain, a role for which the former Captain would be eminently suited? After all, "Klem Zareff's guardsmen were mercenaries. A little over a year ago they had, at best, been homeless drifters, and not a few had been outlaws."⁴⁰⁹ If homeless drifters and outlaws can become trusted guardsmen, then surely Shanlee could have wangled an officer's commission. Thus, instead of *sneaking past* Merlin's physical defenses, 'Captain' Leibert could have *joined* them; indeed, been one of their leaders. And, incidentally, very well placed to carry out his mission to destroy Merlin.

On the surface, Shanlee's religious disguise relates well to the general local religious belief in Merlin, and therefore a seemingly logical choice. **But by disguising this military man as a 'preacher', the deduction made here is that Beam really means he is a 'Pritcher' in disguise.** So now we see another name parallel; Captain/General Han Pritcher is paralleled by Captain/General Carl 'Preacher'. Asimov's character appears to have a German name; Han (Hans) Pritcher. So as a 'Pritcher' in disguise, Piper's phony preacher has the appropriately German-sounding alias of Carl Leibert.

To complete the comparison, it only remains to point out that both military men ditch their uniforms and grow beards for their clandestine mission, only to shave their beards and don new uniforms after they fail.

When the Mule conquers Terminus, Captain Pritcher "discarded the [Foundation military] uniform as soon as I could" and he doesn't shave for thirty days. After meeting the Fox, he dons "leaden aprons and heavy face shields" for his undercover job as Shield-man Lo Moro at "Atom-Field Bearings, Inc." Upon failing to kill the Mule and his subsequent capture and Conversion, Han shaves his red beard and puts on the uniform of the Mule's Union of Worlds.⁴¹⁰

Similarly, when Conn first met him on Luna, General Shanlee was wearing a Federation officer's uniform, "with the four stars of his retirement rank." But the General discards his uniform before following Conn to Poictesme, and grows a beard on the six-month journey. When he arrives on Poictesme, he adopts a local disguise as a preacher, which counter-intuitively includes salvaged Federation military clothing. He "wore Federation fatigues—baggy trousers, ankle boots and long smock, dyed black." After his failure to destroy Merlin, Shanlee is captured and strip-searched. But his disguise is not returned, for "A Federation Army officer's uniform had been found reasonably close to his size".⁴¹¹

The overall parallels for this section are as follows.

	Asimov	Piper
Conspiracy led by	"The Fox"	General Foxx Travis (whose name may refer to red hair)
Conspirator	"Captain of the [Foundation] Fleet" Han Pritcher; later General	Captain, now General Mike Shanlee of the [Federation] Third Fleet-Army Force
Cause	"the holy interest of the State"; it can therefore be said that the Foundation is his religion	"The Federation was our religion; like patriotism used to be, back in the days of nationalism."
Disguise	"a beard of russet intensity"; his alias is Shield-man Lo Moro	the white beard and pageboy bob of a preacher; his alias is Carl Leibert
Clothing	"I discarded the uniform as soon as I could", changing it for "leaden aprons and heavy face shields."	Exchanges his four-star general's uniform for "Federation fatigues—baggy trousers, ankle boots and long smock, dyed black."
About the beard	Fox: "I once saw you. I'm trying to remember, and the beard is definitely out of the picture." Pritcher: "I haven't shaved in thirty days."	"Conn...[had] seen this Carl Leibert before, somewhere, and somehow he was sure that the long white hair and the untrimmed beard weren't part of the picture." In fact, Conn saw Leibert/Shanlee only once, when visiting Foxx Travis on Luna. The beard "was grown [in 6 months] aboard ship coming out from Terra."
Threat/Threatened	Mule/Second Foundation	Merlin/Second Federation
Threat location	the Mayor's Palace on Terminus, the Foundation planet	Force Command on Poictesme, Piper's 'foundation' planet
Device	"the tiny atomic bomb under his tongue"	"Vest-pocket thermonuclear"
Device result	bomb previously deactivated; Pritcher and the Mule (actually, his Viceroy) both live	Shanlee prevented from detonating it; he and Merlin (plus the Fawzi's Office Gang) survive
Conspirator result	Pritcher Converted to Mule's service, promoted to General; succeeds him as First Citizen	General Shanlee switches sides, joins the new Project Merlin as nominal head; thus the 'first human' under Merlin
New uniform	Officer's uniform of the Mule's Union of Worlds	"A Federation Army officer's uniform had been found reasonably close to his size"

38. Two 'Storis Endes'

Both authors end their stories similarly, with two subplots involving two couples, expressing familial joy and bright planetary futures.

a) *First Subplots and Couples: The Darells and the Maxwells*

In Asimov, the first 'couple' are the father and daughter team of Toran and Arkadia Darell. They begin the 'Search by the Foundation' together, but are then separated for some time, as the headstrong Arkady stows away on Homir Munn's spaceship in order to participate in the Search for the Second Foundation on Kalgan. There, she is separated from Munn—and still farther from her father—by traveling an even greater distance to Trantor with the Palvers, in order to escape Lord Stettin and protect the location of the Second Foundation, which she has just deduced ("a circle has no end"). After the Foundation defeats Kalgan in war, and then 'defeats' the Second Foundation, she returns to Terminus and her father.⁴¹²

But her father is suspicious; did Arkady figure out that Terminus "contained both Foundations" on her own, or was it mentally planted there by the Second Foundation? So he performs "an encephalographic analysis" on her to find out. "Never in Darell's life had an analysis proceeded so slowly, cost him so much, and when it was over, Arcadia huddled down and dared not look. Then she heard him laugh, and that was information enough. She jumped up and threw herself into his opened arms. He was babbling wildly as they squeezed one another. "The house is under maximum Mind Static and your brain-waves are normal. We really have trapped them, Arcadia, and we can go back to living." "⁴¹³

The future of Terminus is therefore very bright; indeed, it's brilliant. "Slowly the magnitude of the victory was soaking into him and saturating him. The Foundation—the First Foundation—now the only Foundation—was absolute master of the Galaxy. No further barrier stood between themselves and the Second Empire—the final fulfillment of Seldon's Plan. They had only to reach for it— Thanks to—" ⁴¹⁴

In Piper, the family situation is a bit more complex. The first couple is a threefold combination; Flora Maxwell and her father Rodney, Flora and her brother Conn, and Flora and her fiancé Dr. Wade Lucas. She is first close to, and then distances herself from, all three men. They begin *The Cosmic Computer* together, for Flora and Wade got engaged while Conn was at school on Terra, and she is with Wade and her father upon Conn's arrival home at Litchfield. Or at least, Dr. Lucas *should* have been there, but he was called away by an "emergency...Obstetrical case; that won't wait on anything." This domestic happiness is soon shattered, however, for Conn and his father begin the Search for Merlin together with the Fawzi's Office Gang. Using angry words, Flora and Wade distance themselves from Conn and Rodney, who they consider liars and swindlers. Then, when her father and brother persuade Wade to join them in their business and civic ventures, Flora dumps her fiancé. As Conn's girlfriend Sylvie Jacquemont puts it, "Flora had this fight with Wade Lucas...Lucas is in business with your father, now, and she can't convince him that you and your father are a couple of quadruple-dyed villains...Anyhow, the engagement is *phhhh!*" Wade Lucas tells the Maxwell men, "I tried to explain what you're trying to do, but she wouldn't listen. She just told me I'd gotten to be as big a crook as you two." ⁴¹⁵

In a secondary separation, Flora's mother also distances herself from her husband and son. Mrs. Maxwell objects to even the concept of Merlin, which frightens her; is against her husband's new business ventures, which she believes are too big and too risky; and upon Conn's first triumphant return from Koshchei with a load of power-unit cartridges, heralding a new age of interplanetary commerce, she is disappointingly not there to meet him. And, along with her daughter, she even stops speaking to both men. After Conn's second trip to Koshchei, Rodney tells him that "your mother and Flora aren't speaking to either of us, any more." ⁴¹⁶

But, just as Arkady is eventually reunited with her father, right after the Second Foundation is located on Terminus and 'destroyed', the Maxwell women are eventually reunited with their men, right around the time Merlin is located on Poictesme and *almost* destroyed. While the manual controls to Merlin are being dug up, Flora is the first to reconcile, thanks to Sylvie Jacquemont. "Go ahead, Flora...Make up with Conn. It won't be any harder than making up with Wade was." So Flora's engagement to Dr. Lucas is back on, but Mrs. Maxwell remains unconvinced, and when General Travis' recording confirms her fears that her husband and son are liars and swindlers, she suffers a total collapse. However, after the 'Merlin Crisis' is successfully resolved, with the Cosmic Computer being found and uncovered, Mrs. Maxwell

completely recovers. At the end of the novel, the family is all back together. Flora and Wade are having their wedding rehearsal; about to begin living together as man and wife, and start a family of their own. And Mrs. Maxwell is happily speaking to her son and husband, again. “Where’s your father?” his mother was asking him. “He has to rehearse giving the bride away.” Conn: “Probably in his office. I’ll go get him.” “You’ll get into an argument with somebody and forget to come back,” his mother said. “Sylvie, you go with him, and bring both of them back.” All is well with the Maxwell family.

And all is well with Poictesme, the ‘foundation’ planet. Its future appears to be very bright; indeed, brilliant. “[E]verybody was talking about the bright future, when Merlin would guide Poictesme to ever greater and more splendid prosperity.”⁴¹⁷ By following the Merlin Plan, the Poictesmeans will create the Second Universal State and become absolute masters of the (known) Galaxy.

Finally, we also note the similar last names; Darell and Maxwell. Both end in –ell, and both have two vowels; a before e. And once again, a chart of parallels.

Asimov

The Darells (Arcadia and Toran)

Arcadia is living with her father on Terminus, when Pelleas Anthor arrives, a student of Toran’s old colleague Dr. Kleise. Anthor is going to help Darell, and three other men, search for the Second Foundation. Though its existence has long been known, the location of the future-predicting Second Foundation is still a mystery.

Arcadia leaves her father to search for the the Second Foundation with Homir Munn in the Mule’s palace on Kalgan.

On Kalgan, Arkady is then separated from Munn; partly because she has to get away from Lord Stettin, a villain who wants to marry her, but mainly because she has discovered the location of the Second Foundation. She flees to Trantor with Preem Palver and his wife.

On Trantor, halfway across the galaxy from Munn on Kalgan and her father on Terminus, Arkady hears of the war between Kalgan and the Foundation. Unable to communicate directly, she persuades Palver to travel to Terminus with food supplies, and while there deliver a message to her father. “A circle has no end”; the location of the Second Foundation is on Terminus.

Kalgan is defeated in war, and Toran sends a message with Palver for Arkady to come home. Munn returns separately from Kalgan. Soon

Piper

The Maxwells (Flora, Conn, Rodney and Mrs.)

Flora (and Mrs. Maxwell) are living with Rodney on Poictesme, when Conn returns from school on Terra. Conn is going to help Rodney, plus a group of about ten other men, search for Merlin, the future-predicting supercomputer. Merlin is believed to be on Poictesme, but its exact location is a mystery; the men hope that Conn was able to learn the answer on Terra.

Flora separates from her father and brother due to their search for Merlin, which Conn pretends to believe is on Koshchei. Flora doesn’t believe it exists, and persuades her fiancé, Wade Lucas, that Conn and Rodney are liars and swindlers.

When Conn returns from Koshchei, where he didn’t even pretend to search for Merlin, he learns that Flora has separated from her fiancé, Wade. Wade has joined the Maxwells’ business ventures; he tries to persuade Flora they’re legit, but she keeps her distance from these “quadruple-dyed villains”.⁴¹⁸

When Conn returns from his second trip to Koshchei, he learns that Flora and his mother are no longer on speaking terms with him and his father. The distance between the women and their men is at its greatest. Not long after, evidence begins surfacing that Merlin really does exist. The factory which fabricated its parts on Panurge is found, as are references to Project Merlin in the Library on Poictesme, and “a disc-shaped mass” buried on top of Force Command. It appears that Merlin may be on Poictesme after all.⁴¹⁹

Merlin is found at Force Command on Poictesme; as it is being dug up, Flora makes up with Wade and Conn. But the Travis statement causes Mrs.

thereafter, the Second Foundation is 'found' on Terminus and 'destroyed'.

Arkady's brain-wave pattern shows that she has not been controlled by the Second Foundation; her deduction that it was on Terminus is therefore believed to be correct. She and her father embrace happily, and will participate in the planetary celebrations.⁴²⁰ Terminus can now create the Second Galactic Empire, free from interference.

Maxwell to collapse, the stock market to almost collapse, and there is faction fighting all over the planet. General Shanlee attempts to destroy Merlin, and then comes the ultimatum from Koshchei, threatening to nuke Poictesme with "super-missiles".

The ultimatum causes the fighting on Poictesme to cease, the stock market recovers, as does Mrs. Maxwell. She is reunited with her husband and son, and happily prepares for her daughter's wedding. In fact, everyone is celebrating, as both Merlin and planetary prosperity have been recovered. Poictesme looks toward the future, confident that it will create a new Federation.

Notice that Asimov's family consists of a father and daughter; Toran and Arkady Darell, which Piper paralleled with Rodney and Flora Maxwell. But then he 'complemented' this by adding the exact opposite to his family; a *mother and son*, Mrs. Maxwell and Conn! Adding two people also 'doubles' the size; this is apparently related to the 'two' foundations in both author's future histories, and supported by Beam's inclusion of a 'double' wedding at the end of his tale (see *Piper's 'Doubles'*, below).

b) Second Subplots and Couples: Teachers and Students

The second 'couple' in Asimov are the behind the scenes manipulators; First Speaker Preem Palver of the Second Foundation and his unnamed student. They meet several times during the Search by the Foundation, Palver instructing his student on the intricacies of the Seldon Plan, its failure, and their efforts to restore it. After the Plan is restored, the First Speaker of the Second Foundation discusses how this was accomplished with the student. But by the end of their talk, "The First Speaker had long since stopped speaking to the Student. It was an exposition to himself, really, as he stood before the window, looking up at the incredible blaze of the firmament, at the huge Galaxy that was now safe forever."⁴²¹

In Piper, the situation is again more complex; the second couple is again twofold. The first is Rodney Maxwell and his son, Conn. Similar to Palver and his student, they are working behind the scenes to restore planetary prosperity (the Maxwell Plan)—which 'failed' after the System States War—under cover of the Search for Merlin. In several instances, Rodney instructs his son on the finer points of working behind the scenes to accomplish their goals. "As long as you agree with those people, you're a brilliant young man; you start getting ideas of your own, and you're just a half-baked kid. You let the older and wiser heads run things. You can't begin to hope to foul things up the way they can. Look at all the experience they've had." It boils down to a simple phrase; "Keep them happy."⁴²² By keeping the Fawzi's Office Gang happy, Conn and Rodney can pursue their real goal and fulfill their secret Plan.

And like the First Speaker's concluding monologue, at the end of *The Cosmic Computer* Rodney Maxwell gives a speech. When one of the Storisende businessmen is about to nominate Rodney as the next President of Poictesme, "He grabbed Kurt Fawzi by the arm and yanked him to his feet", and with a stirring monologue nominates the Mayor of Litchfield instead. He even adds quietly, "Ghu, what a narrow escape!"⁴²³ In an Asimovian context, this makes perfect sense. As we saw in (32.), Mayor Fawzi of Piper's foundation planet parallels the Mayor of Terminus. The Mayors of Terminus became figureheads, the actual power being held by the Merchant Princes and their Combines. Likewise, President Fawzi will be a figurehead; Rodney Maxwell, the 'merchant prince' and head of Piper's 'combines', will really be running things. And since they control the Cosmic Computer, the Maxwells become the 'human speakers' of Piper's Second Foundation; the men who feed questions into Merlin and translate his computations into plain language.

Rodney Maxwell is therefore a combination of Hober Mallow and the First Speaker; he 'speaks first' before the other man can make him the *physical* leader of Poictesme, so that he can keep controlling things behind the scenes, like the Second Foundation.

The second couple is Conn Maxwell and Sylvie Jacquemont, a duo who also seem to parallel the First Speaker and his student. Rodney is not a computerman; it is Conn who actually communicates with, or is the 'speaker' for Merlin. And we recall that Conn was a student of positronics, who was offered a junior professorship at the University of Montevideo on Terra. As shown way back in section 2., this means that he parallels Gaal Dornick, the young graduate who joins the Seldon Project. Asimov implies that Dr. Dornick becomes Professor Seldon's successor, which means that Conn Maxwell should become the leader of Piper's Second Foundation, probably after his father and/or General Shanlee dies.⁴²⁴

In support of this deduction, like Professor Seldon and Dr. Dornick (not to mention Preem Palver, who undoubtedly studied, and quite possibly taught, at the University of Trantor), Conn becomes something of a professor in *The Cosmic Computer*. During his second stay on Koshchei, he is an *ad hoc* instructor in building a hypership. "Studying hyperspace theory—fortunately, there was an excellent library here—and setting up classes, and teaching school." When all the 'lost' spaceships are found at Sickle Mountain Naval Observatory, "he went back to his classroom. "All right, class dismissed," he said. "You have twenty minutes to get your bags packed. We're going to work for real, now." " He even speculates where his career would be, had he stayed on Terra. "If he'd accepted that instructorship at Montevideo, he wouldn't be a full professor now, but none of the rest of this would be happening, either."⁴²⁵

As for Sylvie Jacquemont being Conn's 'student', Piper provides a couple examples. First, she "was like the girls he'd known at the University" of Montevideo—an ersatz coed—and she helps him fix his mother's household robots so they can respond to voice commands. Second, she goes with him to Koshchei on his second trip there, and becomes a real student of his; "one of the star pupils in the computer class".⁴²⁶

However, Sylvie Jacquemont also appears to parallel Arkady Darell. Sylvie embraces her father during the festivities celebrating the first arrival of the *Harriet Barne* on Poictesme from Koshchei; this echoes how Arkady embraces her father on Terminus, after which she asks if they can participate in the celebrations for the victory over Kalgan. Also, Sylvie travels to Koshchei with Conn, just as Arkady travels to Kalgan with Munn; the difference being that Sylvie's father accompanies his daughter (because he's a spaceship captain), while Arkady's father stays home (because he's not).⁴²⁷

Differences. In Asimov, the title First Speaker "bore no deeper significance than the fact that at the gatherings of the leaders of the Second Foundation, he spoke first".⁴²⁸ But Piper provides a very practical reason for Conn (and his successors) having to 'speak' for Merlin. The Cosmic Computer's predictions are based on data that has "to be abstracted and summarized and translated from verbal symbols to the electro-mathematical language of computers, and fed in." Once the calculations have been made, "the braille-like symbols on the tape had to be retranslated, and even Merlin couldn't do that for itself. Merlin didn't think in human terms."⁴²⁹ It therefore takes a computerman like Conn to figure out, and tell the other humans, what Merlin is saying.

Another difference is that in Asimov, Arkadia Darell and her father Toran are *physically* separated; she leaves Terminus and travels first to Kalgan, and then Trantor. Psychologically, however, they are 'together', for both father and daughter are searching for the Second Foundation. In Piper we find the reverse. The separation between Flora and Mrs. Maxwell from Conn and Mr. Maxwell is *psychological*, rather than physical. Aside from Conn's two trips to Koshchei, they all physically stay on Poictesme. But the psychological gulf is wide, for Conn and his father (later joined by Lucas) are trying to restore planetary prosperity, which the women believe is a lie and a swindle.

We also see Piper's 'complementary approach', again. After being separated from her father, Arkady is physically reunited with him in a loving embrace. But when Flora makes up with Conn, there is no hug, and Beam never even mentions how she (and her mother) made up with her father!

c) Piper's 'Doubles'

Comparing the two author's endings, the major change by Piper is the addition of a double wedding; Flora Maxwell to Wade Lucas, and Conn Maxwell to Sylvie Jacquemont. In the Foundation series, that would be as if Asimov had had Arkady Darell and her father meet with Preem Palver and his student. Beam therefore 'tied' the two ends together in his story. One then wonders if he did so precisely because there are 'two' Foundations in Asimov's series (Terminus and Trantor), which Beam echoed in his Terro-

Human Future History (Marduk and Gilgamesh). Two characters plus two characters equal four, the same as two Foundations plus two foundations. Two weddings on Poictesme also mean that the foundations of two new families have been laid.⁴³⁰ Possibly a reflection of Beam's two foundations, physical and psychohistoric, which both start on Poictesme, but later end up on two separate worlds. Or, since the two new young families of Lucas and Maxwell are of physical beings (fathers, mothers and the children to come), it could also represent the two *physical* foundations; first Poictesme, then Marduk.

The double wedding may also echo Piper's 'double meeting', for he has the same core group of people—the Maxwell family and the Fawzi's Office Gang—gather in Litchfield at the beginning of the story (when they begin the Search for Merlin) and at the end (after the Search succeeds). With a few additions to the latter group; notably Yves Jacquemont and General Shanlee. Thus, the double meeting seems to have a 'double meaning'. For if we consider the computer expert Conn Maxwell as Beam's version of 'The Psychohistorian', Prof. Dolf Kellton of Litchfield Academy as 'The Encyclopedist', Kurt Fawzi as 'The Mayor', Yves Jacquemont as 'The Trader', Rodney Maxwell as 'The Merchant Prince', and Mike Shanlee as 'The General', then **Beam ends his novel with a meeting of characters who actually represent the first six installments of the Foundation series!**⁴³¹ (See **Appendix 2** for more 'doubles'.)

The final aspect of the 'Storis Ende' is that both Asimov's and Piper's stories end on the same planet they began. The Foundation series begins with the recently-graduated Gaal Dornick arriving on Trantor, the planet where both Foundations of the Second Galactic Empire originate, and ends with Preem Palver on Trantor gazing into the night sky, confident in the new Empire to come.⁴³² Similarly, *The Cosmic Computer* begins with the recently-graduated Conn Maxwell arriving at Litchfield on Poictesme, the planet where the physical and psychohistoric foundations of the Second Universal State begin, and ends with the whole gang relaxing at a wedding rehearsal in Litchfield on Poictesme, confident in the new Federation (which turns out to be a Galactic Empire) to come.

And finally, the Darells' belief that Terminus is now unopposed, and will create the Second Empire without interference by the Second Foundation, is wrong; just as the Maxwells' belief that Poictesme will create the Second Universal State is wrong. Trantor and Gilgamesh will really be running things.

39. "More Lies; Lies Without End"

In *The Cosmic Computer*, there is a great deal of dishonesty. Conn Maxwell lies ("That, and his career of mendacity, would start at breakfast"), his father Rodney lies ("We'll have to lie to everybody else, with every word we speak"), General Foxx Travis lies ("There never was any such computer. I only wish there had been; it would have shortened the War by years"), and General Mike Shanlee also lies (he "lied, deliberately and repeatedly, to conceal the existence of Merlin"), and while disguised as a *clergyman* no less. Moreover, General Travis' recorded denial of Merlin's existence is countered with Colonel Zareff's "Hah! Who's the liar now?", followed by Conn, whose counter-denial involves "picking his way carefully between fact and fiction", until General Shanlee finally says that "I'll tell you the truth, which will be something of a novelty all around." Even the title character lies. When asked if he should be destroyed, the Cosmic Computer's answer "was summed in the first word: *Falsification*. "So Merlin's got to be a liar, too, along with the rest of us!" Sylvie cried. "Conn, you've corrupted his morals!" "All of Merlin's subsequent statements released to the public will mean "More lies; lies without end."⁴³³

Thus, *all five main characters lie*, keeping everyone else (the Poictesmeans by the Maxwells, the Federation public by the Generals and Merlin) in the dark.

Does anyone else lie?

How about H. Beam Piper? He is the real 'main character' of *The Cosmic Computer*, being its author. One can say that he 'wrote the book' on all this dishonesty, and if this paper is correct, then he himself was less than honest about its contents, leaving the general public (all his readers) in the dark. Indeed, given the very large number of Foundation parallels cited above, plus John Carr's observation that "*Beam...did nothing by accident*",⁴³⁴ one must ask a final question:

Is *The Cosmic Computer* itself a lie?

We've already seen that Piper's character Mike Shanlee (in his disguise as Carl Leibert) asks pretty much the same question. "Can it be a lie? Is there no Great Computer?" This can be restated as, "Is the

Great [Cosmic] Computer a lie?" Thus, the Awful Truth about Beam's book may not be that every one of his main characters lie, but *the story itself is a lie*, in the sense that it is largely based on Asimov's concepts. But also in the sense that Piper was writing a great story *based on* a lie—his original story "Graveyard of Dreams", in which Merlin *really is* a lie; it does not exist.

H. Beam Piper was a wonderful storyteller, but the reverse side of that coin is that he is also known to have been a convincing liar. He informed people the 'H' in his name stood for Horace when it really stood for Henry; he told Jerry Pournelle that his wife Betty "only married me to get an expensive Paris vacation" when *she* was the one with money, and even believably asserted that "I was born on another timeline."⁴³⁵

Beam's ability to tell convincing falsehoods is expressed in fictional form by the two main characters in his story "Dearest". To prevent his nephew and niece-in-law from committing him to an insane asylum, retired Colonel Ashley "Slaughterhouse" Hampton tells a large, plausible-sounding lie. The mental response from the discarnate entity he calls Dearest is "Oh, brother!... *When bigger and better lies are told, we tell them*, don't we Popsy?" Col. Hampton's openly stated procedure for lying may well be a reflection of Piper's. "A good workmanlike liar never makes up a story out of the whole cloth; he always takes a fabric of truth and embroiders it to fit the situation." He smiled grimly; that was an accurate description of his own tactical procedure at the moment."⁴³⁶

As a good workmanlike liar, Beam seems to have taken a great many threads from Isaac's Foundation fabric (plus a few from his Robot tales), and embroidered them to fit his own future historical situation. **In fact, since the Cosmic Computer, Merlin, becomes a liar, the real title of Beam's book should be *The Cosmic Liar*.** That is, not just a 'bigger and better' liar, but a Really Big, Cosmic-Sized Liar. Beam mentions The Big Lie in several places, most notably *Space Viking*. On Taniith, Lucas Trask lies to the Back-to-Gram and Raid-Xochitl-Now parties that Andray Dunnan is on Marduk, when he believes he is not. This is because Trask wants their support in liberating Marduk from tyranny, thereby preventing a major interstellar war; a much more important course of action than their narrow partisan causes.⁴³⁷ But in both *The Cosmic Computer* and *Space Viking*, the Big Lie actually turns out to be the truth. Merlin really does exist and is on Poictesme, and Andray Dunnan really is on Marduk.⁴³⁸

Seeing as how *The Cosmic Computer* and *Space Viking* were both published in 1963, it is safe to assume that Piper wrote them around the same time. It is therefore not surprising that their Big Lies are connected, not just cosmically but 'foundationally'. The Generals' Big Lie about the non-existence of Merlin and his predictions of doom keeps the Terran Federation (the First Universal State) from breaking up prematurely and catastrophically; then, when discovered anyway, Merlin's lies are designed to enable Poictesme to become the foundation planet of a Second Universal State; and when *that* fails, Prince Trask's Big Lie saves the Mardukan monarchy, thereby enabling Marduk (and Gilgamesh) to become the new foundation planet(s) of the Second Universal State.

That's *within* the created universe. If this paper's thesis is correct, then on the *outside*, in the real world, *The Cosmic Computer* is Piper's version of The Really Big Lie; a cosmic-sized or indeed 'galactic' lie, since it was largely based on the Foundation series. Given all of Beam's improvements on Asimov's ideas, it could even be considered a 'bigger and better' Foundation story.

One wonders if Lucas Trask's words about his Big Lie can be put in Beam's mouth to describe *The Cosmic Computer*. "I will tell them all a big lie. *Such a big lie that nobody will dare to disbelieve it.*"⁴³⁹

In his Preface to *Federation*, Jerry Pournelle also states that "Beam never believed in doing anything by halves."⁴⁴⁰ Applying that to *The Cosmic Computer* or *Liar*, it appears he not only didn't do it by half, he took lying to a whole new level. Or, one might say, a higher *plateau*. Which brings us to

40. Tamper Plateaus

As we noted in "**A Circle Has No End**", 'lied to' can mean that one's brain has been 'tampered with', a subtle parallel with the Second Foundation. Conn Maxwell is lied to (or tampered with) by General Foxx Travis, in order to convince him that Merlin doesn't exist, yet he travels to Koshchei ostensibly as part of the Search for Merlin. This parallels Homir Munn, who travels to Kalgan and back searching for the Second Foundation, and then is Tampered with by them into believing that they don't exist.

So if Piper was hiding the Awful Truth about *The Cosmic Computer*, that means *he has been tampering with us*.

"Tamper Plateaus" play a big role at the end of the Foundation series. They are discovered and talked about on Terminus, the Foundation planet. Pelleas Anthor calls Dr. Darell's attention to "the secondary Tauian waves in the frontal lobe", which electro-encephalographic analysis indicates have become "featureless plateaus in frontal lobe regions where strong swings should have been expected." Such plateaus therefore reveal that "something has been cut out...Not in a physical sense, however. You know, the Mule could have done just that. He could have suppressed completely all capacity for a certain emotion or attitude of mind, and leave nothing but just such a flatness."⁴⁴¹ The comparison of electro-encephalographs would then look something like this:

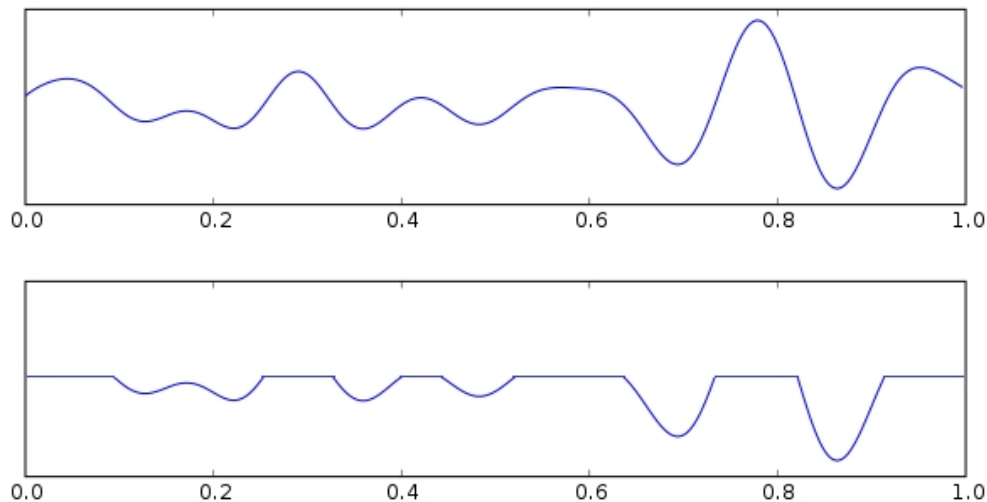


Figure 9. Normal EEG Theta wave pattern (top), and 'plateaus' after Tampering by the Second Foundation (above).⁴⁴²

But by this time, the Mule has been dead for many years, and since Tamper Plateaus have been found among some "intellectuals, government officials and business leaders" of Terminus, it must be because "the Second Foundation is directing the historical course of the Galaxy...they must do it subtly and in as minimal a fashion as possible. If they work through minds, as they must, it is the minds of people with influence; culturally, industrially, or politically."⁴⁴³ To prove the point, it is after Homir Munn returns to Terminus from Kalgan that his brain-wave shows a Tamper Plateau, revealing that sometime during his trip, he was "adjusted" by the Second Foundation.⁴⁴⁴

Like the Tamper Plateaus of Terminus, there seem to be a couple of 'tamper plateaus' on Poictesme, Piper's foundation planet.

First, there is Lucy Nocero, Rodney Maxwell's secretary. She is not lied to like Conn; she is physically abducted and her brain is actually tampered with, by a mind-probe. "Somebody who either didn't know how to use one or didn't care what happened had used a mind-probe on her. It's twenty to one she'll never recover" from her present mental state, which is that of "a hopeless imbecile."⁴⁴⁵ With a large chunk of her former intelligence gone, we can therefore deduce that Lucy's once-normal brainwave pattern is now severely altered; it may contain flatlines, or plateaus. (Figure 10.)

Not big enough? The second one is Force Command Duplicate. Force Command, the very first abandoned Federation military site taken over by the Maxwells, who are lying about the existence of Merlin. Force Command, where the Search for Merlin begins and ends; where General Travis had his secret office and commanded the Top Secret Project Merlin, where Merlin's ability to predict the future started; where Travis and his aides swore to keep the Awful Truth About Merlin and the Federation a secret, where all this lying, this tampering with the truth, really began. Force Command, where the Cosmic Computer is located, the computer which will now be a liar along with everyone else, but whose "lies without end" will be used to plan the future of humanity, the Merlin Plan.

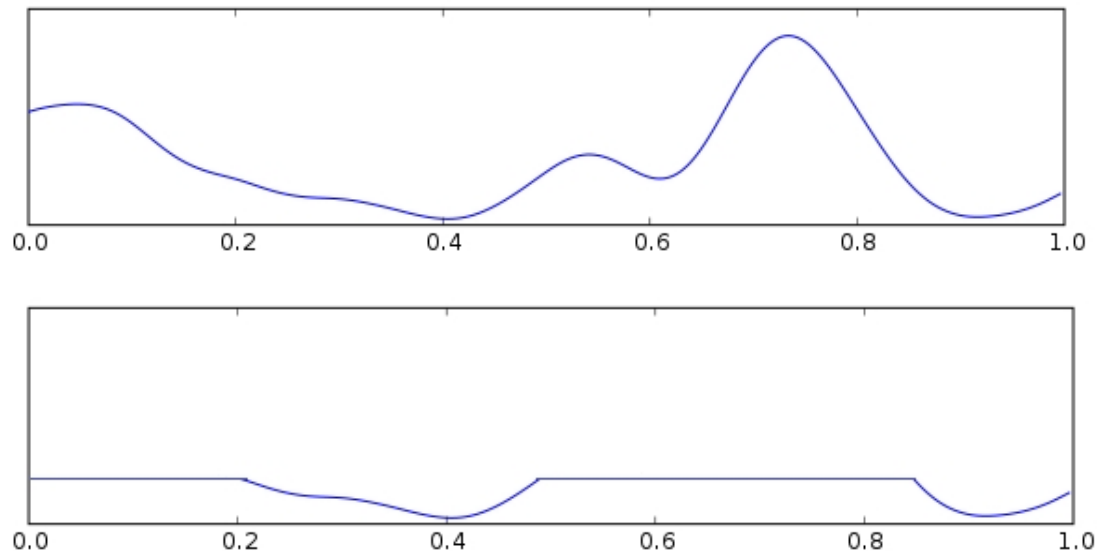


Figure 10. Normal EEG Delta wave pattern (top), and pattern after careless mind-probing by the Second Federation (above). ⁴⁴⁶

Force Command Duplicate, and Merlin, are located inside a mesa. *A plateau.*

Force Command is therefore a 'Mesa of Lies', one great big Tamper Plateau. Tampering with the truth, in order to beneficially tamper with the Terro-Human Future History. (Figure 11.)



Figure 11. Mesa containing Force Command Duplicate; Piper's physical version of Asimov's Tamper Plateaus. ⁴⁴⁷

Notice that Beam's is a *physical* plateau, in contrast to Isaac's *psychological* one. Another example of his 'complementary' method. He therefore appears to have interpreted Asimov's electro-encephalograph wave patterns as *topographical cross-sections*, displaying hills, valleys and (in their Tampered versions) plateaus and mesas. This is a reasonable deduction, for as an avid outdoorsman, Piper had done some surveying himself,⁴⁴⁸ and was therefore undoubtedly familiar with topographic maps.

In that sense, a mesa can be viewed as an eroded mountain, or a hill without a top. So now, if we paraphrase Asimov's statements about Tamper Plateaus and apply them to Piper, the mesa of Force Command Duplicate becomes a 'featureless plateau where a strong swing of topography should have been expected.' Due to ages of erosion, 'something has been cut out, in a physical sense.' Indeed, human beings followed nature, by physically cutting out a five hundred-foot deep pit into the eroded mesa's top, in order to build Force Command.

41. "Mundus Vult Decipi"

A final piece of evidence that *The Cosmic Computer* was Piper's Really Big, or Cosmic-Sized, Lie. Though the present paper is concerned with the substantial Asimov influence on Piper's book, we recall that Beam was also a fan of James Branch Cabell. He admitted that at one time, he wanted to "write like Cabell, which would have taken a lot of doing".⁴⁴⁹ From Cabell's works, Piper derived the name for his 'foundation' planet, Poictesme, and its capital Storisende.

Apart from Jurgan (whose name appears in Piper's "A Slave is a Slave"),⁴⁵⁰ the main character of Cabell's Poictesme novels is Dom Manuel (possibly the model for "Baron Maniwel" in *Space Viking*).⁴⁵¹ The Biography of Dom Manuel "includes a total of 25 works that were written over a 23-year period. Cabell stated that he considered the *Biography* to be a single work, and supervised its publication in a single uniform edition of 18 volumes, known as the *Storisende Edition*, published from 1927 to 1930."⁴⁵²

Dom Manuel was the ruler of Poictesme, and his coat of arms—and therefore the arms of Poictesme—is a silver stallion, which appropriately appears on the cover of the novel, *The Silver Stallion*. A fuller version of these arms are included on the definitive map of Poictesme, drawn by Peter Koch, and published in 1928. The arms are displayed toward the map's upper right corner, not far from the capital city of Storisende. (Figure 12.)



Figure 12. Map of Poictesme by Peter Koch, 1928.⁴⁵³

As usual with coats of arms, a motto is included, and this one is “Mundus Vult Decipi”.

The motto of Poictesme is “The World Wants to be Deceived”.

This is just the first half of the full Latin phrase “Mundus vult decipi, ergo decipiatur,” meaning “The world wants to be deceived, so let it be deceived.” “The saying is ascribed to Petronius, a Roman satirist from the first century AD.”⁴⁵⁴

Piper’s characters deceive Poictesme because their world wants to be deceived. For their own mental well-being, the Poictesmeans *want* to believe in Merlin; it relieves the reality of their poverty-stricken situation, it gives them hope. Without that hope they would be “lost and wretched”.⁴⁵⁵ So Conn and Rodney Maxwell let them be deceived; they “do like any fortune teller; tell the customer what he wants to hear”, which they think is a lie (because Travis told Conn that Merlin didn’t exist), but is really the truth (it does exist, because Travis lied).

However, James Branch Cabell’s Poictesme is a fictional province in southern France—on *our* world; Terra, Earth. *We* want to be deceived, for our own well-being. Because “For Cabell, veracity was “the one unpardonable sin, not merely against art, but against human welfare.” ”⁴⁵⁶ In order to create truly great art, *one must lie*. Specifically, a fiction writer must ‘lie’ to his readers, who then indulge in ‘the willing suspension of disbelief’ in order to escape the real world and believe in the story, which then becomes their temporary reality. Thus, Piper was lying by telling us what we wanted to hear; or rather, writing what we wanted to read—on the surface, a great science fiction story, but underneath, *another Foundation novel*. A book that we think is the truth (*The Cosmic Computer*, an original Piper creation), but is actually a lie (being largely based on Asimov’s concepts).

John F. Carr has described H. Beam Piper in an interesting manner. “A thin patrician nose bridged two flint-hard eyes which would occasionally twinkle as though listening to the punch line of some inner joke on the human condition.”⁴⁵⁷

Given the cosmic scope of his deduced deception, one can almost imagine Piper smiling his inner smile, right now.

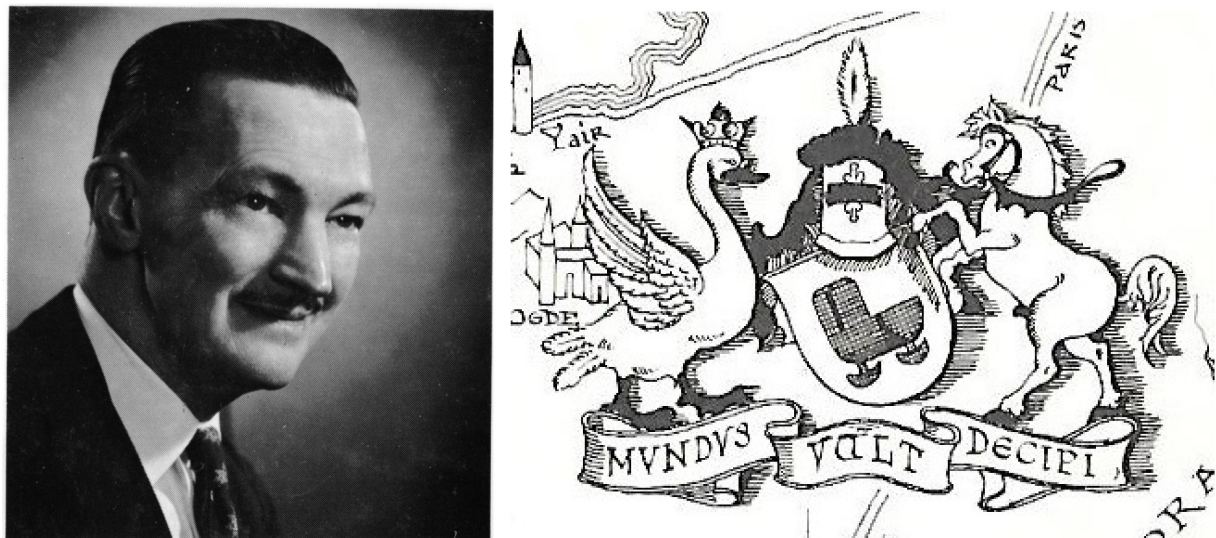


Figure 13. Piper and the arms of Poictesme. “Brother! If they swallow that [story], I have it made; they’ll swallow anything!” Or, “I will tell them all a big lie. Such a big lie that nobody will dare to disbelieve it.”⁴⁵⁸

42. Conclusion: “It Was So Simple That Nobody Had Ever Guessed It”

It is fifty years, now; fifty years since *The Cosmic Computer* was first published in 1963, fifty years since ‘Piper’s Foundation’ was established in print. It therefore seems an appropriate time for the Awful Truth about Merlin, the reality about this ‘Cosmic Liar’, to be revealed.

For the present researcher, the opening wedge was the Cosmic Computer's ability to predict the future, which seemed to be Piper's version of psychohistory. This was noticed around 1978, the first time I read the book. It wasn't until 2006, almost thirty years later, that several other parallels occurred to me. Since Beam undoubtedly knew what he was doing—and deliberately did not name Merlin's ability—the rest of his novel became suspect. From that psychohistoric opening came the great number of parallels presented herein, which show, almost without question, that Piper was modeling Asimov's Foundation series (and partly the Robot series) for his own tale of future history. And more, for the Asimov influence also extends into the Terro-Human Future History at least until the First Galactic Empire is established. Asimov's thousand-year Interregnum between the First and Second Galactic Empires is the literary model for Beam's thousand-year interregnum between the Second Terran Federation (his First Universal State) and the First Galactic Empire (his Second Universal State). The historical model for both, as will be discussed in **Appendix 1**, is the Fall of the Roman Empire and the Medieval period that followed.

By this paper's count, there are more than fifty parallels between the Foundation series and *The Cosmic Computer*, plus Piper's subsequent interregnum period after the fall of the Federation. This is far too many for coincidence, particularly if we apply Beam's own criteria from "The Edge of the Knife". That story also deals with predicting the future—though in a psychic sense, rather than psychohistoric—and there, the chances of coincidence are extremely slim. Professor Chalmers' successful prediction of the assassination of Khalid ibn Hussein is "A ten-point coincidence: Event of assassination, year of the event, place, circumstances, name of assassin, nationality of assassin, manner of killing, exact type of weapon used, guards killed and wounded along with Khalid, and fate of the assassin. If that's a simple and plausible coincidence, so's dealing ten royal flushes in succession in a poker game. Tom, you figured that out; what did you say the odds against it were?"⁴⁵⁹

What about the odds against a *fifty-point* coincidence? For both Asimov's and Piper's versions of psychohistory are developed several centuries before the fall of a 'first' universal state; both are the last great scientific advance of their civilization; both are developed by fewer than a hundred human beings; both mathematically predict the fall of the universal state and a long period of subsequent barbarism; both are developed too late to save the universal state; it is generally believed that both universal states "would last forever", so the predictions of collapse are greeted with disbelief and cause the predictor to be put on trial; both trials initially involve five judges and include the possibility that the predictor will be eliminated; however, neither defendant is convicted or eliminated, and neither judicial proceeding is an actual trial; both predictors come up with a Plan to create a new or 'second' universal state; both new universal states will begin with the establishment of two 'foundations', one physical, the other psychohistoric; both of these foundations are originally located on the same planet, but are later separated; and both physical foundations are located on a poor planet at the edge of the universal state.

Additionally, in both *Foundation* and *The Cosmic Computer*, immediate disclosure of the coming universal fall to the general public would catastrophically hasten it; thus, in order to succeed, both Plans must be kept secret and masked by cover projects; both periods of secrecy are exactly fifty years; the fall of both first universal states results in the reappearance of feudalism as well as a wide variety of other forms of government;⁴⁶⁰ both falls are followed by interstellar wars and the appearance of a brand new religion; both new religions are centered around psychohistory and are defensive in nature; the 'Prophet' of both religions is a leader of the old Project; both new religions are used to recivilize barbarian worlds; both authors' Plans fail but are subsequently rescued; both stories involve a Search for the now-hidden predictor, whose existence is known, but location is not; both Searches happen in two phases separated by forty years; in the first phase, research is done at both capital planets, while phase two involves an extensive physical search; in both Searches, several deductions are made as to where the hidden predictor is located, including the possibility that it does not exist; both predictors are finally located at an 'end' of the Galaxy; both 'ends' are actually related to a circle, which has no end; and both Plans result in the establishment of a second universal state 1000 years in the future, in which both foundations unite, and the capital planet moves from the periphery back to the center.

Furthermore, both Asimov's and Piper's tales begin with a young university graduate landing on the 'foundation' planet to begin work on the Project; both Projects are run by a group of older men, yet both young graduates eventually become the leader; both Projects involve the accumulation of all human knowledge; members of both predictors' groups are harassed by Government agents; the heads of both

Projects reappear in recorded messages several decades after predicting the universal state's fall; both project heads are confined to chairs; both are in their 70s when the prediction of doom for the universal state is first made, and well over a hundred when the recorded message is seen; both messages are recorded at the capital planet, but viewed on the poor planet at the edge; in both recordings, the project head denounces the current cover project as a fraud; both recordings are viewed at the time of a major Crisis; both Crises contain a military ultimatum, the expiration date of which is one week; also around this time, a 'Mayor' with business interests peacefully takes over the foundation planet; both Mayors are aided in this effort by the fact that the current planetary rulers are incompetent; in both tales, an undercover military officer is sent by a 'Fox' to destroy the main threat with a hastily-devised miniature nuclear weapon; both men plan to give their lives to carry out this mission; however, both of these plots fail, and the officer then switches sides and joins forces with the threat, donning a new uniform; both works include the threatened and actual use of military mental-probes; and both end with a 'double' subplot involving two pairs of people, revealing that both Plans are on track, and the Galaxy apparently safe forever.

Moreover, the above summary doesn't include additional parallels left out of this paper, plus those my research has undoubtedly missed.

A final interesting parallel occurs. The truth about Merlin's existence is revealed by the end of Piper's book, and if the current thesis is correct, the hidden truth about *The Cosmic Computer* has finally been revealed, as well. The seasonal timing also coincides. Beam's book begins and ends in the autumn, and it was in the autumn (late November 2006) that the present research began. And even the year is close. Merlin is opened in AE 896, forty-two years after it was sealed away in Force Command Duplicate, when its secret was thought to be safe for the foreseeable future. It is therefore of possibly more than just personal interest that what could be called 'the Piper Plan', the hidden modeling of Asimov's Foundation series, was uncovered by the present author forty-three years (1963-2006) after Piper 'safely sealed away' the secret in the pages of *The Cosmic Computer*.

Of the secret passage connecting Foxx Travis' office in Force Command Duplicate to Merlin's control center above, Piper has his main character Conn Maxwell say, "It was so simple that nobody had ever guessed it."⁴⁶¹ He could just as easily have been referring to the 'secret passages' (sources) in *The Cosmic Computer*. A quote attributed to Abraham Lincoln is "You can fool all of the people some of the time, and some of the people all the time, but you cannot fool all of the people all the time." Assuming the present paper is correct, H. Beam Piper did indeed fool us all for half a century. No mean feat for a man who hid his sources practically in plain sight.

In fact, since he improved on almost all of Asimov's concepts, while simultaneously reducing the three Foundation books into one, I submit that *The Cosmic Computer* may be Piper's crowning novelistic achievement. He not only out-Asimoved Asimov in modeling the novels that in 1966 won a Hugo Award as "the Best All-Time Series",⁴⁶² but *Beam did it so well that no one noticed!* This would appear to be the acme of writing skill; an eminent confirmation of Piper's subtle, yet simple—and underrated, but substantial—genius.⁴⁶³

Appendix 1. Parallel Historical Models

Some of the parallels given in the main paper are due to the fact that, for *Foundation* and *The Cosmic Computer*, both authors used the same historical model.

It is known that Isaac Asimov modeled the First Galactic Empire on the Roman Empire. "Asimov traced the idea for the Foundation stories to a 1941 subway ride when he was going to visit [John W.] Campbell at his Street and Smith office. Searching for an idea, Asimov looked down at a collection of Gilbert and Sullivan plays he was reading, opened it to *Iolanthe*, and saw a picture of the fairy queen kneeling in front of Private Willis of the Grenadier Guards. His mind wandered to soldiers, to a military society, to feudalism, to the breakup of the Roman Empire. When he reached Campbell's office, he told the editor that he was planning to write a story about the breakup of the Galactic Empire."⁴⁶⁴

According to Isaac, "My enthusiasm must have been catching, for Campbell grew as excited as I was. He didn't want me to write a single story, he wanted a series of stories, in which the full history of the thousand years of turmoil between the Fall of the First Galactic Empire and the rise of the Second Galactic Empire was to be outlined. It would all be illuminated by the science of "psychohistory" that Campbell and I thrashed out between us."⁴⁶⁵

Thus, after the Galactic Empire begins breaking up, the early Interregnum parallels the Dark Ages following the Fall of Rome. The first major state to arise after that was the Carolingian or Holy Roman Empire of the Franks, theoretically a resurrection of the Western Roman Empire. The Mayors of Terminus would then parallel the "Mayors of the Palace". In a bloodless coup, Mayor Salvor Hardin overthrows the incompetent Encyclopedists as rulers of the Foundation; a parallel of Mayor Pepin III, who replaced "*le rois fainéants*", the do-nothing Merovingian monarchs of northern France. Pepin's son was of course Charlemagne, crowned as the first Holy Roman Emperor in the year 800 AD.⁴⁶⁶

This ties in H. Beam Piper. At first glance, and as revealed by John Carr, the Terran Federation is modeled on the British Empire. The Uller Uprising is based on the Sepoy Mutiny in India, while planetary organizations like the Chartered Zarathustra Company echo British ones like the East India Company.⁴⁶⁷

However, in the summer of 2000, I realized that Piper was also modeling the Terran Federation on the Roman Empire. In *Space Viking*, we learn that the fall of the Federation is followed by the appearance of "Neobarbarians" and "Space Vikings", the latter of which come from beyond Federation space, and raid planets all over the Old Federation. These two groups parallel the Germanic barbarians who destroyed Western Rome, and then the subsequent age of the Vikings, who came from Scandinavia beyond the old Roman frontiers, and raided all over Europe and the Mediterranean world.

The Roman model is supported by *Uller Uprising*, which mentions a "geek messiah", "General Pontius von Pilate", "a nice thirty-piece silver set" and "the Terran Pax".⁴⁶⁸ The novel takes place in AE 526; roughly halfway between the Federation's beginning in AE 31 and its end circa AE 1097. Thus, the Uller Uprising is not just modeled on the Sepoy Mutiny. It is also modeled on the events which occurred in the First Century CE (Christian or Common Era), roughly halfway between the Roman Empire's beginning circa 500 BC and its end circa 500 AD; the betrayal of Jesus by Judas Iscariot for thirty pieces of silver, the washing of hands by Pontius Pilate, the crucifixion of Jesus Christ, and the *Pax Romana*.

It therefore appeared that Beam was employing a *creative combination* of historical models. The Terran Federation is actually based on the British Empire *and* the Roman Empire.

Since *The Cosmic Computer* deals with the impending fall of the Terran Federation, and the hope that Poictesme will become the nucleus of a new universal state—plus the many parallels with Asimov's Foundation series already noted in the main paper—it followed that Poictesme, like Terminus, is modeled on medieval France. Beam's use of the name "Poictesme" thus gains meaning, because in James Branch Cabell, Poictesme is a fictional medieval province in southern France. Southern France is famous for its wines, and Poictesme is known for its brandy made from "wine-melons".⁴⁶⁹

It is implied that the breakup of the Terran Federation will be followed by the rise of a 'Poictesmean (or Third Terran) Federation', which replaces it. The Poictesmean Federation, like "the Foundation Federation" in Asimov,⁴⁷⁰ would then be modeled on the Carolingian or Holy Roman Empire of the Franks, theoretically a renewed Western Roman Empire. Thus, Piper's parallel of the first ruling "Mayor

of the Palace” would be the Mayor of Litchfield, Kurt Fawzi. In a peaceful election, Mayor Fawzi ‘overthrows’ the incompetent First Families of Storisende as rulers of Poictesme; a parallel of Mayor Pepin III, who replaced the do-nothing Merovingian monarchs of France. Pepin’s son was Charlemagne, crowned as the first Holy Roman Emperor in the year 800 AD. This suggests that, not too long after *The Cosmic Computer*, the Poictesmean Federation will become a great state, with a powerful ruler.

The French aspect of Poictesme is also seen in Piper’s characters Yves and Sylvie Jacquemont, whose names are French. Yves becomes the principal hypership captain in a new company, Trisystem and Interstellar Spacelines, and trade will play an important role in the expansion of the Poictesmean Federation. His capable daughter Sylvie marries Conn Maxwell, who becomes the top ‘psychohistorian’ on Poictesme, and will therefore be a close advisor of the next planetary President, Kurt Fawzi.

The French connection may also explain why Poictesme is part of a “Trisystem” of three stars and their attendant planets. It is an old historical cliché that Roman Gaul was divided into three provinces; from north to south, Lugdunensis, Aquitania and Narbonensis.⁴⁷¹ The Alpha, Beta and Gamma Systems would then parallel these three provinces. James Branch Cabell’s Poictesme is partially bounded by the “Golfe du Lion”, or Gulf of Lyon, so Piper’s Poictesme and indeed the whole Alpha system should likewise parallel southern France, or Narbonensis. The planets of the Beta system are named from the works of François Rabelais, and Rabelais was born in Chinon, in the Touraine region of central France.⁴⁷² So Beta Gartner and its planets like Pantagruel roughly parallel central France, or Aquitania.

However, the third ‘province’ of Piper’s France is actually English. The planets of Gamma Gartner are named from the works of Edmund Spenser, an English writer of the late medieval period. Spenser’s *Faerie Queene* was written in the Elizabethan Age, and contains the characters Britomart and Calidore, the only two names Piper gives for planets of the Gamma system. Gamma Gartner therefore parallels northern France, or Lugdunensis; an area usually ruled by England during the medieval period, especially during the Hundred Years War. Moreover, northern France includes the region of Brittany, whose inhabitants migrated from Britain in the early post-Roman period; Normandy, whose dukes became Kings of England after the Norman Conquest; and Calais, the closest point to England, and the last French possession the English held, until 1558.⁴⁷³

The Trisystem as a parallel of Gaul or France also explains why Piper changed “the Brain” in Graveyard of Dreams to “Merlin” in *The Cosmic Computer*. Merlin is a famous wizard of early medieval fiction, the councilor of King Arthur, who fought and defeated the failing Romans in Gaul. In the end, however, Merlin was trapped in “the strongest tower in the world” by the enchantress Vivien. And even though Merlin is a British character, the location of his imprisonment was the forest of Brociliande, *in northern France*.⁴⁷⁴ Although we’ve seen that Force Command Duplicate is Piper’s version of Asimov’s Tamper Plateau, he also seems to have skillfully included the Arthurian legend, by having his Merlin trapped in a mesa, or ‘tower of rock’, located on Poictesme. This is apparently “the strongest tower in the world”, because Colonel Zareff calls it “the safest place on the planet.”

As we saw in **Both Secret Plans Fail**, the failure of Poictesme to create a new Federation parallels the initial failure of the Foundation to create a new Empire. The Merlin Plan fails because the Seldon Plan fails, or at least is derailed by the Mule. But the Foundation recovers after the Mule, so why doesn’t Poictesme recover after the Merlin Plan fails? *Poictesme doesn’t recover because France didn’t recover*. After the dissolution of the Carolingian Empire, Frankish power quickly declined, and the Holy Roman Empire soon moved east, finding a new center in Germany. And there it remained for almost a thousand years, from the later 800s to 1806, when it was formally dissolved by Napoleon.⁴⁷⁵

Piper therefore improved on Asimov yet again, by staying truer to the historical models. First, Isaac does mention that the Galaxy reverts to barbarism after the fall of the First Empire (which Beam improved to ‘neo’-barbarism), but he mentions no ‘space Vikings’ arriving to raid the remnants, which should take place because of the Roman model. And in the war against Kalgan, the Battle of Quoriston is described as “the last battle of consequence during the Interregnum”.⁴⁷⁶ It’s all largely peaceful for the next 600 years, when the Second Galactic Empire is finally proclaimed. Second, the recovery of the Seldon Plan should have resulted in a new Peripheral planet becoming the First Foundation, replacing Terminus.

Thus, the transfer of the Holy Roman Empire from France to Germany explains why Marduk replaces Poictesme as the new nucleus—or second physical foundation—of Piper’s Second Universal State. And Beam gave Marduk several German elements. In *Space Viking*, Marduk suffers a Nazi-style takeover of

its government, and it is later liberated by an 'allied' fleet, paralleling the Allied liberation of Nazi Germany. A major Mardukan city is named "Drepplin", which seems to combine the German city of Dresden and the German airships called zeppelins. Drepplin is a center of Mardukan Nazism, and it is implied that the city will be dealt with in a particularly harsh manner, including the use of nuclear weapons. This parallels the controversial Allied firebombing of Dresden in WWII, plus the Hindenburg disaster, in which the famous Nazi zeppelin went down in flames. And third, Marduk is a founding member of the League of Civilized Worlds, whose historical model seems to be the Hanseatic League of northern Germany.

The historical models in the parallel future histories therefore run as follows.

Historical Model	Asimov's Future History	Piper's Future History
Roman Republic/Empire	First Galactic Empire	(First and Second) Terran Federation
Rome, the 'City of Seven Hills' in central Italy, is the Imperial capital.	Trantor (a modified anagram of Otranto and/or Taranto, Italy) is the capital planet-city.	Terra (named for a Roman goddess) is the capital planet; the capital city appears to be Montevideo, whose name means "I see a hill"; thereby making it the 'City of the Seen Hill'.
(Western) Roman Empire collapses, Rome sacked twice and destroyed.	Galactic Empire collapses, Trantor suffers "the Great Sack" and is destroyed.	(Second) Federation collapses, Terra is "bombed back to the Stone Age" and possibly sacked.
Center of Roman civilization shifts to Constantinople; the Greek or Eastern Empire. The Greco-Roman emperors have a personal guard of Varangians; Vikings who worship Odin and Thor.	New center of Galactic civilization established on Terminus, at the 'eastern' end of the Galaxy, in a 'Greek' region of space; its neighbors include Smyrno, Anacreon, Loris and Konom.	Located fairly far from Terra, but still in the central regions of the Old Federation, Odin eventually becomes the new center of Terro-Human civilization; the Galactic Emperors have a personal bodyguard of Thorans.
Germanic barbarians rule the West, followed by the appearance of feudalism; Western Empire succeeded by kingdoms like France, princedoms, duchies, etc.	Galaxy begins reverting to barbarism; reappearance of feudalism; newly-independent prefects near Terminus become the Four Kingdoms.	Appearance of Neobarbarians and reappearance of feudalism; Terran Federation succeeded by kingdoms like Marduk and the Sword-Worlds; Viking base planets are princedoms (Tanith) and lordships (Aditya).
Mayors of the Palace; French noblemen who replace the do-nothing Merovingian monarchs and begin to reconstitute the Western Roman Empire.	Mayors of Terminus, who replace the incompetent Encyclopedists and start the Foundation on the road to a Second Galactic Empire.	Mayor Kurt Fawzi, later President of Poictesme (literary southern France), and his successors, who replace the incompetently-ruling First Families of Storisend and start "a new" Federation on Poictesme.
Carolingian Empire based in France; an early and short-lived phase of the Holy Roman Empire which partially resurrects the Western Empire.	Terminus, the First Foundation (later the Foundation Federation.)	The 'Poictesmean Federation'; a presumably short-lived state that briefly and partially resurrects the Terran Federation.
After the fall of the West, Constantinople was "at the centre of the [trade] network	Independent Traders, like Hober Mallow of Smyrno, promote the expansion of	Poictesmean expansion begins with the "Revival of interstellar communications and trade", and is

that remain[ed] and in its continuing prosperity lay the only hope for an imperial *revanche*.”⁴⁷⁷

Carolingian Empire collapses; its successor states include Neustria, Austrasia and Lotharingia; later France, Italy and Germany.

Vikings from Scandinavia, beyond the old Roman frontiers, begin raiding the rest of Europe, constituting a major threat to what’s left of Western civilization.

Holy Roman Empire, now headquartered in Germany, becomes the newest version Of the Western Roman; Empire; it lasts for almost a millennium.

The Hanseatic League of northern Germany creates a powerful trading and mutual-defense network among towns in the Baltic and North Seas; the ‘periphery’ of the old Roman Empire.

the First Foundation by creating an economic network that is followed by political control.”⁴⁷⁸

Seldon Plan fails; the Mule conquers Terminus and much of the Galaxy. His “Union of Worlds” ruled from Kalgan is a short-lived state that does not survive him.

(none)

First Foundation defeats the Kalganian Union; the Seldon Plan recovers. Terminus proceeds to create the Second Galactic Empire in a single thousand years.

The Foundation’s trade network revives; a “commercial federation”⁴⁸⁰ is created, mainly along the Periphery of the Galaxy.

followed by “expeditions, conquest and re-education of natives...”⁴⁷⁹

Merlin Plan fails; Poictesmean Federation collapses, and the planet itself may fall to an invader. Presumably it is succeeded by several interstellar states, one of which may be centered on Marduk.

Space Vikings from the Sword-Worlds, located far beyond the Old Federation’s frontiers, begin raiding all over Federation space. They are a major threat to the few civilized worlds which are left.

Marduk defeats combined forces of six other planets; the Merlin Plan presumably recovers. Marduk then becomes the second physical foundation of the Second Universal State, which will now be called the First Galactic Empire. The Empire is established exactly a thousand years after Merlin predicts the end of the Terran Federation.

Tanith, Marduk, Amaterasu and Beowulf create the League of Civilized Worlds; a powerful commercial and mutual-defense network located mainly in the outer reaches of the Old Federation.

From this comparison, it appears that Asimov’s First Foundation, Terminus, is actually a *combination* of the Holy Roman (French incarnation) and Byzantine Empires. His parallel of the Mayors of the Palace are located on Terminus at the ‘eastern’ end of the Galaxy, paralleling Constantinople at the eastern end of the Mediterranean Sea. Similarly, Piper’s First Galactic Empire seems to combine the Holy Roman (German incarnation, Marduk) and Byzantine (Greek, Odin) Empires.

In addition, while I am certain that Asimov used the Mayors of the Palace as his model for the Mayors of Terminus, I’m not sure he used the fall of the Carolingian Empire as the model for the failure of the Seldon Plan. Primarily because the physical nucleus of civilization does not move to another planet, which as we’ve seen is what should happen. Though to be fair, it almost does, because the Mule attempts to create the Second Galactic Empire from his headquarters on Kalgan. Only the threat (and later, intervention) of the Second Foundation prevents him from doing so.⁴⁸¹

The comparison of universal states also suggests that Merlin and the Gilgameshers (Piper’s ‘second foundation’) have a hand in Marduk’s apparent defeat of a coalition of six other planets; a war of seemingly far more importance than is implied in *Space Viking*. Marduk’s victory against such odds seems similar to the decisive defeat by Gilgamesh of a five-ship Viking raid.⁴⁸²

Appendix 2. More of Piper's Doubles

Since The General in Asimov (Bel Riose) is an enemy who is recalled and executed, while in Piper 'the General' (Mike Shanlee) is an enemy who switches sides and becomes a friend, there may be a couple more characters in *The Cosmic Computer* who are 'doubles' of Foundation antagonists. For another man in attendance at the (double) wedding rehearsal at the end of Beam's novel is Luther Chen-Wong, "the chief executive of Koshchei Colony".⁴⁸³ Chief Executive Luther Chen-Wong seems to parallel Linge Chen, Chief Commissioner of the Committee of Public Safety on Trantor, and the actual ruler of the Galactic Empire.

a) Parallel Chief Commissioners

Linge Chen is a member of "the aristocratic families" that control Trantor, and who comprise the Commission of Public Safety.⁴⁸⁴ Indeed, since the Commission is "*Usually under the control of the great families of the Chens and Divarts*",⁴⁸⁵ Linge Chen is presumably the head of the Chen family, currently in control of Trantor, and by extension, the Galaxy. From the section **Predictors on Trial**, it will be recalled that the Commission of Public Safety puts Hari Seldon on the dock, essentially making Linge Chen the 'chief judge' of these quasi-legal proceedings.

It is therefore interesting that Luther Chen-Wong is a lawyer, and a member of "the First-Families-of-Storisende oligarchy" that has run Poictesme since its founding.⁴⁸⁶ His legal firm is "Sterber, Flynn, and Chen-Wong", in which "Sterber is married to Jake Vyckhoven's sister, Flynn's son is married to the daughter of the Secretary of the Treasury, and [Luther] *Chen-Wong is a nephew of the Chief Justice*. All of them are directly descended from members of Genji Gartner's original crew."⁴⁸⁷

Thus, it appears that **Piper provided Asimov's character with a literary nephew**. For Luther Chen-Wong, nephew of the Chief Justice of Poictesme, Chief Executive of the planet Koshchei and member of the First Families of Storisenide, seems 'related' to Linge Chen, the Chief Commissioner or 'chief judge' of the Committee of Public Safety, and head of one of the chief aristocratic families on Trantor.

Now for some extrapolating. Since Chief Commissioner Linge Chen runs Trantor and the entire Galaxy, Beam may have planned for Luther Chen-Wong to eventually become President of Poictesme, or 'Chief Executive' of the whole Trisystem. His current job as governor of Koshchei would then be a stepping-stone; the harbinger of a greater role to come. At the end of *The Cosmic Computer* it is strongly implied that Kurt Fawzi will defeat Jake Vyckhoven and become "the next President of Poictesme"; probably the first non-First Families member to win such high office. President Fawzi may therefore be succeeded in turn by President Chen-Wong. Luther is part of the First Families oligarchy, but friendly to the Maxwell-Fawzi group, thereby making him a candidate that both sides could support.

However, in Asimov, Linge Chen is a ruthless and powerful enemy of Hari Seldon and the Seldon Plan. He threatens to destroy them, and then exiles them to Terminus. If this parallel holds true in Piper, then even though he is currently friendly, Luther Chen-Wong may later become a powerful enemy to the Maxwell and Merlin Plans; a reverse of how 'the General' (Shanlee) is an enemy who becomes a friend. In support of this deduction, we've seen that Koshchei (which threatens to destroy Poictesme) parallels Kalgan, and Kalgan of course becomes the capital of the Mule, conqueror of the Foundation; as well as Lord Stettin, who tries to reconquer it but fails. Thus, Luther Chen-Wong's appointment as chief executive of Koshchei Colony works out to be a 'double negative'; a parallel of Linge Chen plus the enemy planet Kalgan. It's actually a triple negative, because Kalgan never threatened to 'destroy' the Foundation, merely to conquer it; while the "superweapons" on Koshchei, which do not destroy Poictesme in the book, are in fact probably used against Poictesme in the future, causing the Merlin Plan to fail.

However, Rodney Maxwell says that "Sterber, Flynn and Chen-Wong will be probably be defending anti-trust suits till the end of time."⁴⁸⁸ And since that firm seems to be firmly in the Maxwell camp, it is more likely that Luther's *successors* are the ones who become the enemy. For as we've seen, the Chen-Wongs are one of the aristocratic First Families of Poictesme, paralleling the aristocratic Chens of Trantor. Thus, after Luther's time, other Chen-Wongs may become President, in a pseudo-hereditary manner; paralleling the hereditary Indburs of Terminus. Assuming that occurs, then President Luther Chen-Wong may be the first to 'combine' the closely-intermarried First Families with the closely-intertwined Maxwell companies; Piper's version of Asimov's 'Combines'.

Although a strong politico-economic center of Chen-Wongs and Maxwells would seem to serve the Merlin Plan, making Poictesme a shoo-in to create a new Federation, what we would really have is a situation paralleling that in *Foundation and Empire*. The political and economic leadership of Poictesme are so successful that they become corrupt—just like the Merchant Princes of Terminus, whose figure-head Mayors eventually become hereditary. This stimulates the creation of a Democratic Underground on Terminus, and causes the Independent Trading Worlds to unite against the home planet.⁴⁸⁹ Something very similar could therefore happen to Poictesme and its Federation.

As we saw in section 26, Asimov's war of *Foundation and Empire* may be paralleled by a war of 'Federation versus Federation' in Piper. Like the defeat of the Galactic Empire, the shrinking Terran Federation is defeated in war by the growing 'Poictesmean Federation'. After this, Poictesme probably has no external physical enemy of consequence, paralleling the postwar dominance of Terminus. Yet even before this time, Piper's 'foundation' planet has become corrupt. Those who speak out against the corruption come to grief (paralleling Lathan Devers), forcing the democratic opposition underground, at least on the home planet. The outer worlds of the expanding Federation, however, are less easily controlled, and begin to plot revolt (paralleling the Independent Trading Worlds, who plan to revolt against Terminus). Part of their justification could be that the Merlin Plan presumably calls for a new *democratic* Federation (like the early Terran Federation), not an Imperial one (like the later Terran Federation).

And as also seen in section 26, the spark that brings down the Merlin Plan may be 'a single bullet'. Thus, the postulated duel could be caused by an acrimonious *political* meeting on Poictesme. A heated argument between a member of the corrupt leadership (quite possibly a Chen-Wong, a family formerly friendly to the Maxwell group) and the last major democratic figure (perhaps a Lucas, related to the Maxwell family, but whose ancestor was formerly an enemy, and quoted Thomas Paine)⁴⁹⁰ results in a challenge. The democrat is killed in the duel; the corrupt leadership prevails. But this could be 'the shot heard round the Trisystem'; for with their last hope of internal reform gone, the outer worlds of the Poictesmean Federation revolt, joined by the political underground on Poictesme itself.

In Asimov, the recording of Hari Seldon says that the conflict between "a too-undisciplined outer group of the Foundation against a too-authoritarian center" should result in the defeat of Terminus, "a new and firmer coalition government" and "a healthy increase in democracy". However, the reality is that the Independent Trading Worlds called off their revolt "in the face of the Mule."⁴⁹¹ Their parallels in Piper should therefore run as follows.

First, there are no mutants, so the revolt of the outer Poictesmean Federation is *not* called off. With the internal revolt of the democratic underground, Poictesme is riven by domestic chaos not seen since AE 895, and the Government should be defeated, resulting in a coalition government and a healthy increase in democracy.

But unlike Asimov, whose Independent Trading Worlds are not powerful compared to the Foundation, we recall that Piper included superweapons on Koshchei, and that Poictesme is within their range. Threatened with destruction in the first 'Merlin Crisis', Poictesme would then be actually destroyed in this later Crisis. Taking advantage of the situation, an external enemy, paralleling the Mule (possibly the planet Osiris, as in Carr and Robertson), invades and temporarily conquers the Poictesmean Federation. The Merlin Plan is finished, and Merlin is almost finished, as well. For at some point during the revolt and war, the mesa of Force Command is destroyed, and it is believed the Cosmic Computer went to em-see-square with it. But Merlin and his handlers actually escape to Gilgamesh, paralleling the flight of Toran and Bayta Darell, who escape from Terminus as it falls to the Mule, and end up on Trantor, where the Second Foundation secretly resides.

b) Parallel Mules

Although the external enemy which may conquer Poictesme would parallel the Mule, did Beam even include a 'Mule' in *The Cosmic Computer*? Not *exactly*, but there are several indications in that direction, including an interesting choice of words. For during the discussions about where to search for Merlin, Conn's proposal to grab Barathrum Spaceport is met with strong resistance in favor of Force Command Duplicate. In response, Conn "argued *mulishly* for a while, then saw that it was hopeless and gave in."⁴⁹² Thus, Piper cleverly juxtaposes a 'mule' with his Second Foundation, Merlin, which is what they're searching for, and later do find, at Force Command.

But Conn Maxwell is the protagonist of the story; he can't be the 'Mule', or antagonist, as well! One character in *The Cosmic Computer* who is stubborn as a jackass is Jethro Sastraman, the President of Transcontinent & Overseas Airlines. Sastraman at least looks villainous. "He could play Scrooge in *Christmas Carol* without any makeup at all. He hasn't had a new idea since he got out of college, and that was while the War was still going on." Sastraman mulishly resists letting the *Harriet Barne* be assigned to the new shipping company, Alpha-Interplanetary, but is finally "bullied" into agreement.⁴⁹³ However, at the end of the novel Jethro attends the wedding rehearsal, meaning that, like General Shanlee, he's an enemy who becomes a friend.⁴⁹⁴ This actually makes perfect sense, for at the end of *A Christmas Carol*, Scrooge has a change of heart and becomes a good guy.

Another mulishly stubborn character is President Jake Vyckhoven, who's described as being "no good, and he never was any good!" It takes some "bullying" to get him to agree, as well; in his case ordering "the banks and the Stock Market" to be closed during the Merlin Crisis, thereby averting a financial "panic".⁴⁹⁵ The President of Poictesme starts out being warily friendly to the Maxwells; friendly because they are improving the planet's economy ("No, of course not; a hypership of our own"), but wary because "he's afraid of Merlin. A lot of people have been saying that if Merlin's found, it should be used to determine Government policy. A few extremists are beginning to say that Merlin ought to be the Government, and Jake Vyckhoven and his cronies ought to be dumped. Into the handiest mass-energy converter, preferably. You know, if anybody found Merlin and started it auditing the Planetary Treasury, Jake Vyckhoven'd be the one who'd be wanting a hypership."⁴⁹⁶

The President soon has reason to fear Merlin even more, because "there was growing sentiment in favor of turning the entire Government over to the computer as soon as it was found." This, plus the growing monopolistic power of the interlocking Maxwell companies, finally causes him to turn against them. "The Planetary Government has stopped liking us, you know."⁴⁹⁷ And since it is strongly implied that Jake will be defeated in the forthcoming election, and replaced by Kurt Fawzi as President of Poictesme, it is quite possible that the mulish Vyckhoven becomes a bitter enemy of Piper's protagonists. He could even be joined by some of the "First Families of Storisende oligarchy" which seem to have ruled the planet since Genji Gartner's time.

And Vyckhoven is tied to another seemingly implacable foe. Of the people interfering with the Maxwell Plan, Rodney Maxwell says "I'd think it was either Jake Vyckhoven or Sam Murchison." And the real villain's identity is confirmed not long after; "Sam Murchison, the Terran Federation Minister-General."⁴⁹⁸

Thus, the most unrelenting enemies of the Maxwell/Merlin Plan are Federation Minister-General Murchison and (current) President Jake Vyckhoven. These men, or more likely their professional descendants (possibly including those of Luther Chen-Wong), become the 'Mule' that later brings the Poictesmean Federation down. It is notable that neither Vyckhoven nor Murchison is invited to the double wedding at the end of *The Cosmic Computer*. Naturally not; no bad guys are allowed at happy events.

In Asimovian terms, having an external enemy (Murchison, Terran Federation) plus an internal one (Vyckhoven, Poictesmean politician) again makes perfect sense. The various Seldon Crises are only reached when the internal and external situations come to a boiling point, forcing the First Foundation "along one, and only one, path."⁴⁹⁹ And this is seen in *The Cosmic Computer* itself. For in the climactic part of the story, or 'first Merlin Crisis', an external threat (the super-missiles of Koshchei) are matched by an internal one (planetary faction-fights which threaten civil war).

Appendix 3. “The Master-Camoufleur”

After the System States War ends, the entrances to Force Command Duplicate (and Merlin) are filled in with rock.⁵⁰⁰ Over the next forty years, local weather does the rest. “For a month each winter, cold rains from the east lashed the desert; for the rest of the year, it was swept by windblown sand. Wiregrass sprouted, and thornbush grew; Nature, the master-camoufleur, completed the work of hiding the forgotten headquarters.”⁵⁰¹ Once again, H. Beam Piper may have been talking about himself, for he was a master at camouflaging his sources, even when they appeared in plain sight. That brings us to a late addition to this research, only discovered on 8 February 2015.

We’ve seen that Asimov’s “a circle has no end” is paralleled by the *Ouroboros* in Piper, symbolizing the fact that his ‘second foundation’, Merlin, was located on Poictesme. But as shown in the subsection ***Escape of the Hypership Brains***, Merlin itself was apparently built in the shape of a circle, around Force Command Duplicate. “The walls; the fifty-foot walls, shielded inside and out. Merlin—the circuitry, the memory-bank, the relays, everything—was installed inside them.” Merlin encircles Force Command, which “was built in concentric circles, level above level.”⁵⁰²

Thus, we discovered that Merlin too is ‘a circle that has no end’, symbolically proving that he is Piper’s version of the Second Foundation, which in Asimov was ‘found’ by following a circle around the Galaxy to its end, Terminus. The circular Merlin is located in a mesa on Poictesme (Piper’s ‘foundation’ planet), and Poictesme is located in the Trisystem of Alpha, Beta and Gamma Gartner. A mesa is an eroded plateau or tableland, but as also seen in ***Escape***, Piper subtly connected the mesa of Force Command with the volcano of Barathrum Spaceport, foreshadowing Merlin’s later interstellar transfer from the mesa to a mountain on Gilgamesh. In its shape, a volcano is somewhere between a mesa and mountain, being a mountain without the top, and the three stars of the Gartner Trisystem will form a triangle, by definition.

In *The Cosmic Computer*, the pattern therefore seems to be, circles and triangles.

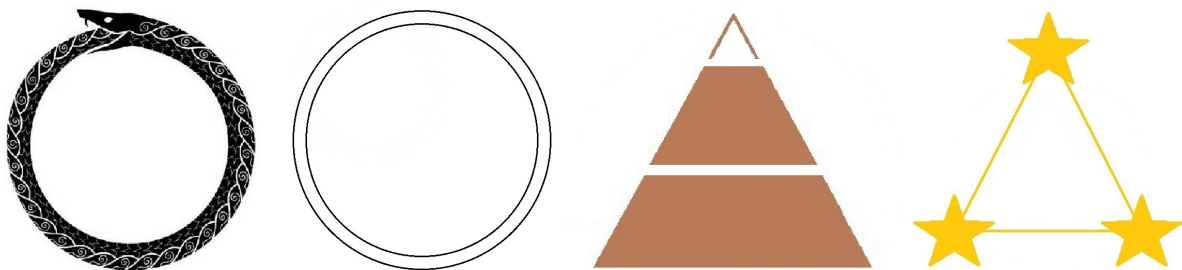


Figure 14. Symbols in *The Cosmic Computer*; the ouroboros, Merlin, a mesa/volcano/mountain, and the Trisystem.⁵⁰³

This may explain the origin of the symbol of Yah the Almighty; the “blue triangle in a white circle.”

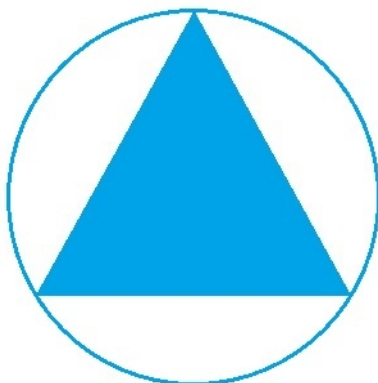


Figure 15. Postulated version of the symbol of Yah and Gilgamesh.

Assuming this deduction is correct, then the circle of 'Yah' actually symbolizes both the *Ouroboros* of Genji Gartner and Merlin's circular shape. By following that circle to its *new* 'end', we find the planet Gilgamesh, where Merlin 'ended' up, perhaps even transported there by an *Ouroboros*, the second, third or fourth ship of that name. The end of Merlin's new circle also takes us to Beam's Second Foundation, for the Gilgameshers are working behind the scenes on Merlin's orders to erect the Second Universal State, just like the psychohistorians of Trantor.

The triangle of 'Yah' would then symbolize Merlin's origin in the Trisystem, its former location within a mesa on Poictesme, its transfer off-planet, possibly via the spaceport inside Barathrum volcano, and its current location inside a mountain on Gilgamesh.

That leaves the colors, blue and white. As we noted in section 28, subsection ***Christianity versus Judaism***, blue and white are the colors of Israel. Perfectly appropriate, since the Gilgameshers are Piper's version of the Jews. However, *blue and white are also the colors of the Terran Federation*.⁵⁰⁴ The blue and white of 'Yah' therefore also symbolize Merlin as "the climactic masterpiece" of Federation technology,⁵⁰⁵ its last and greatest achievement, before its fall; plus Gilgamesh's crucial role in creating a *new* Federation; a task it inherited, along with Merlin, from Poictesme.

This inheritance brings up a third angle to the colors of Gilgamesh. Beam says that "red and white, [are] the Planetary colors" of Poictesme.⁵⁰⁶ Since Yah's colors are blue and white, the color common to both is white, symbolically 'connecting' Poictesme with Gilgamesh. In full, Merlin's colors are therefore "red, white and blue"; echoing its move from Poictesme in the Old Federation to independent Gilgamesh which will "start a new one". Poictesme is a fictional province in southern France, and the French flag is of course the Tricolor; horizontal stripes of blue, white and red. Tricolor; Trisystem. Poictesme's planetary colors should therefore have included blue, but Merlin's transfer to Gilgamesh, whose Jewish-parallel inhabitants have a blue and white symbol, explains why they do not.

The planetary colors are mentioned in relation to "bunting", as Poictesme celebrates the return of the *Harriet Barne* from Koshchei.⁵⁰⁷ Bunting usually means long streamers, draped along fences and balconies in shallow curves, and bunched at intervals by cockades, which are a *circular* form of bunting. Thus, although Beam never provided an emblem for Poictesme, its most likely shape is circular, paralleling the emblem of Gilgamesh (and the wreathed globe of the Terran Federation, for that matter). The outer circle could be red, representing the *Ouroboros*, the ship which founded the planet Poictesme, while the inner circle could be white, for the Silver Stallion of Cabell's earthbound Poictesme.

If so, then the white circle in Gilgamesh's emblem comes directly from Poictesme's emblem, in another symbolic connection between the two planets.

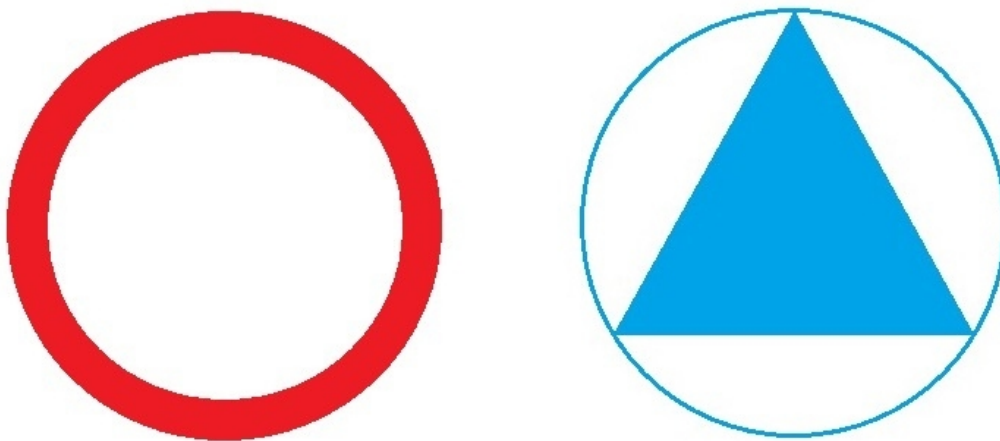


Figure 16. Postulated emblem of Poictesme, and the emblem of Gilgamesh.

Instead of paraphrasing Asimov again, this time we can paraphrase Piper himself. 'Beam, the master-camoufleur, symbolically completed the work of hiding the forgotten computer.'

Right out in the open, as usual.

There's a final interesting aspect to this topic, which I didn't notice until the summer of 2016. Sixty years previously, in the summer of 1956 and during his "French Vacation" with his wife Betty, Beam "managed to see the palace at Versailles, noting dryly in his diary that the main attraction in the Hall of Mirrors needed cleaning."⁵⁰⁸ The question is, did his tour of Versailles include the Royal (Fifth) Chapel? Because as we've seen, Piper not only introduced Yah the Almighty in *Space Viking*, whose name is the first half of Yahweh; he also introduced the planet Tetragrammaton, whose name refers to the four consonants, or both halves, of Yahweh; YHWH.

This cleverly subtle connection could mean that both elements came from the same source. And in the Royal Chapel at Versailles, above the altar, there is an ornate representation of the tetragrammaton, in which "Yahweh" is written in the original Hebrew. The four consonants of the name are embossed *on a triangle within a circle*.



Figure 17. The tetragrammaton in Hebrew, embossed on a triangle within a circle, in the Royal Chapel at Versailles.⁵⁰⁹

Here we may actually see the source of *three* elements in *Space Viking*; Yah the Almighty, the emblem of Gilgamesh and the planet Tetragrammaton. Because to get the emblem of Yah and Gilgamesh, all you have to do is remove the letters from the center. They don't belong, for two reasons. First, Tetragrammaton is a separate planet from Gilgamesh; and second, the name "Yah" would only consist of the first two Hebrew letters (read right to left), not all four.

Notice too that while Gilgamesh is surreptitiously aiding Marduk, the planet Tetragrammaton is also linked to that planet, being one of Marduk's fourteen trade-planets. In fact, it is Dunnan's terror-raid on Tetragrammaton which makes Prince Trask aware that he is waging war on Marduk, leading to Trask's gathering of an allied fleet (which includes a Gilgamesh troop-transport) to save it.

In addition to Versailles, Beam visited famous landmarks in Paris, including “the *Champs Elysees* and the *Arch de Triomphe*”.⁵¹⁰ If he also visited the church of Saint-Merri on the Right Bank, he could have seen a very similar representation of the tetragrammaton. Located just behind and above the altar in the choir, the tetragrammaton in this case has the points of the triangle meet the edge of the circle, just as in my postulated version of the emblem of Yah and Gilgamesh.



Figure 18. Detail of the tetragrammaton and its ‘glory’ in the church of Saint-Merri, Paris.⁵¹¹

Also, the Spanish painter Francisco Goya (1746-1828), “the last of the Old Masters and the first of the moderns”,⁵¹² created a depiction like that at Versailles. Though Piper probably never saw this one, it’s the central part of *The Adoration of the Name of God*, a fresco Goya painted in 1772 “on the ceiling of the cupola over the Small Choir of the Virgin in the *Basilica de Nuestra Señora del Pilar* in Zaragoza.”⁵¹³



Figure 19. Tetragrammaton detail from *The Adoration of the Name of God*, by Francisco Goya,⁵¹⁴

And finally, it is interesting that the name “Merlin” itself has four consonants. Meaning that this “robot god”, who later becomes Yah, already has a tetragrammaton of his own; MRLN.

Appendix 4. Premium Tobacco Near Terra

Both *Foundation* and *The Cosmic Computer* also mention premium tobacco, grown not far from Terra, on a planet circling the Alpha star of a triangular group.

In the *Foundation* series, another early element is Vegan tobacco, cigars of which are apparently the best in the Galaxy. When all the neighboring prefects declare their independence and become the Four Kingdoms, Terminus is cut off from its supply of premium tobacco. Even the new kingdoms have trouble procuring them.

Because during his meeting with the Anacreonian nobleman Anselm haut Rodric, Mayor Salvor Hardin of Terminus lights “a long cigar of Vegan tobacco—not many left, he reflected—”. And when haut Rodric requests one, Hardin gives it “reluctantly”. “Anselm haut Rodric sniffed at it and emitted a clucking sound of pleasure. “Vegan tobacco! Where did you get it?” ” Hardin replies, “We received some last shipment. There's hardly any left. Space knows when we'll get more—if ever.”⁵¹⁵

In “The Mayors”, which takes place thirty years later, the much older Mayor Hardin “sucked lazily at his cigar. He had long since stopped wishing for the mild Vegan tobacco of his youth. Those days when the planet, Terminus, had trafficked with every part of the Galactic Empire belonged in the limbo to which all Good Old Days go.”⁵¹⁶

In *The Cosmic Computer*, Piper also mentions really good cigars. After Conn Maxwell returns home from Terra, he “went to his father's office and found the cigar humidor, just where it had been when he'd stolen cigars out of it six years ago and thought his father never suspected what he was doing.” These Poictesmean cigars are of exceptional quality; possibly even better than those of Terra, which—due to the reclamation projects in the Northern Hemisphere—could again potentially include Cuban cigars. Conn muses, “Why couldn't they grow tobacco like this on Terra? Soil-chemicals, he supposed; that wasn't his subject.” He also thinks, “Why didn't they export this tobacco? It was better than anything they grew on Terra; well, at least it was different, just as Poictesme brandy was different from Terran bourbon or Baldur honey-rum.”⁵¹⁷

Lest one think this a mere coincidence—any number of science fiction authors could include premium tobacco in their future history—the parallels don't stop there.

Both tobaccos are grown near Terra.

Vega is only 24.3 light-years from Earth, and so on a galactic scale is very close to Sol; and Sol is considered to be one of the possible systems of origin for the human species. Lord Dorwin, Chancellor of the Galactic Empire, tells Mayor Hardin and Dr. Pirenne that “Of cohse, no one knows exactly which system it is—lost in the mists of antiquity. Theah ah theawies, howevah. Siwius, some say. Othahs insist on Alpha Centauwi, oah on Sol, oah on 61 Cygni—all in the Siwius sectah, you see.”⁵¹⁸

Poictesme is on the frontier of the Federation, and so is presumably at least 500 light-years from Sol. Moreover, at first glance Piper would appear to have reversed Asimov; his ‘first foundation’ planet, Poictesme, grows excellent tobacco, while Terminus, the First Foundation, does not. However, we recall that Terminus is on the other side of the Galaxy from Vega. “Anacreon stands square across what was our last remaining trade route to Santanni and to Trantor and to Vega itself.”⁵¹⁹ Thus, even though Poictesme seems fairly distant from Sol in *The Cosmic Computer*, from the galaxy-wide perspective of Piper's Fifth Galactic Empire (presumably coterminous with the entire Milky Way, like Asimov's First Galactic Empire), the Trisystem would therefore be located in the local neighborhood of Sol. Placing Piper's version of premium Vegan tobacco very close to Terra, just as in Asimov.

And both tobacco locations are a planet circling the Alpha star of a triangular group.

Vega “is the brightest star in the constellation Lyrae”, and so is also known as “Alpha Lyrae”. But in addition to Lyrae, Vega is “a vertex of a widely-spaced asterism known as the Summer Triangle, which consists of Vega and the two first-magnitude stars Altair, in Aquila, and Deneb, in Cygnus. This formation is the approximate shape of a right triangle, with Vega located at its right angle. The Summer Triangle is recognizable in the northern skies for there are few other bright stars in its vicinity.”⁵²⁰

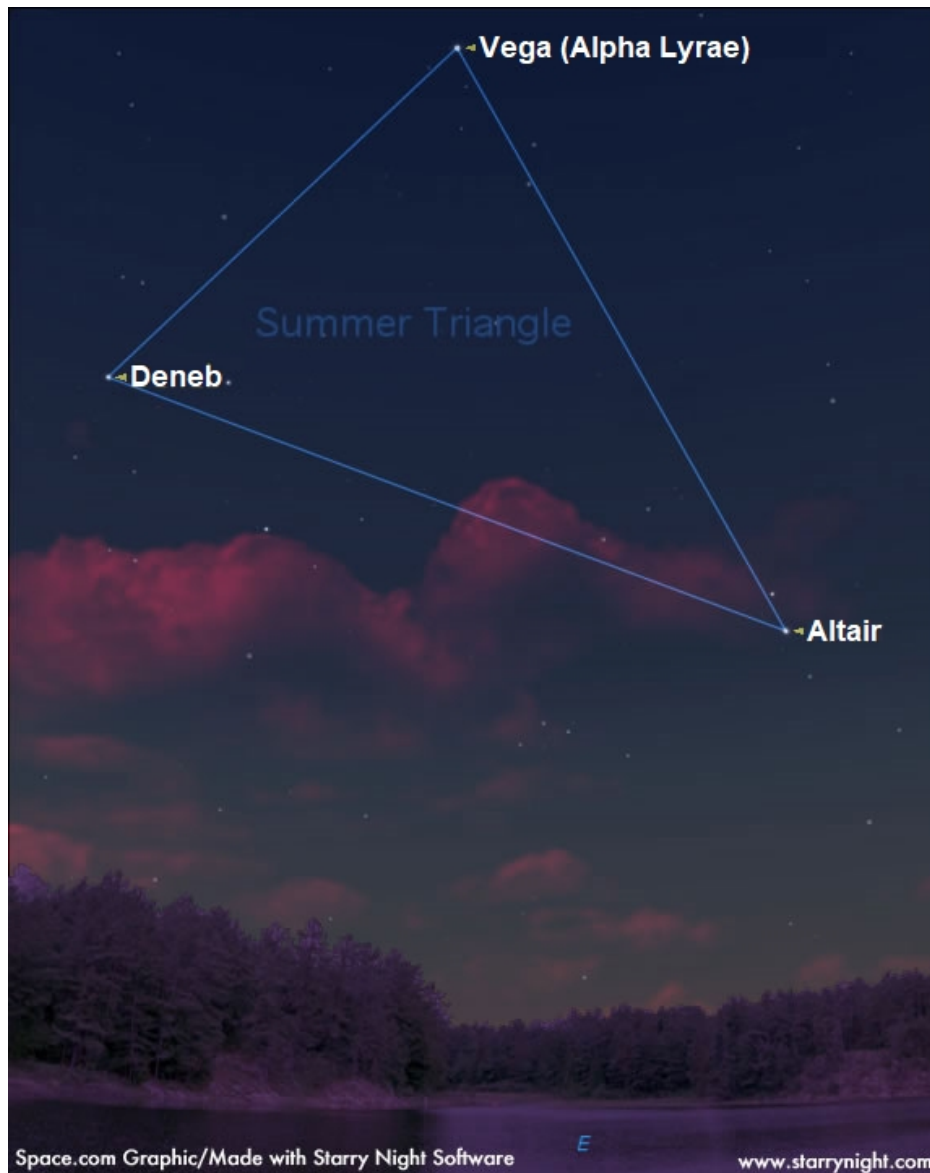


Figure 20. The Summer Triangle, with Vega as its (almost) right angle vertex.⁵²¹

As seen in Figure 20, the Summer Triangle is not quite a right triangle. The angle is not very far from being 90 degrees; my guess would be about 80. As the vertex of an almost-right triangle, we notice that Vega is much closer to one of the stars (Deneb) than the other (Altair).

The Summer Triangle's parallel with Piper's 'Trisystem' is obvious. Poictesme of course circles Alpha Gartner, the first of three stars in what can be called a stellar triangle, or even a little constellation. Beam is not explicit, but it is possible for Alpha, Beta, and Gamma Gartner to form a right triangle. At the very least, he implies an arrangement similar to the Summer Triangle. Alpha and Beta Gartner seem to be fairly close, while at three light-years distant, Gamma is quite a bit farther away.⁵²²

Thus, not only is Piper's version of premium Vegan tobacco grown close to Terra (as in Asimov), it is located at an 'Alpha' star of a three-star grouping (where Alpha is much closer to one star than the other), just like the real Vega (Alpha Lyrae).

My own mental image always had Beta Gartner as the 'right angle' of the Trisystem, but Beam may have intended for Alpha to be so, which would be another parallel with Vega. In that case, Poictesme would be located at the 'right vertex' of the Trisystem.

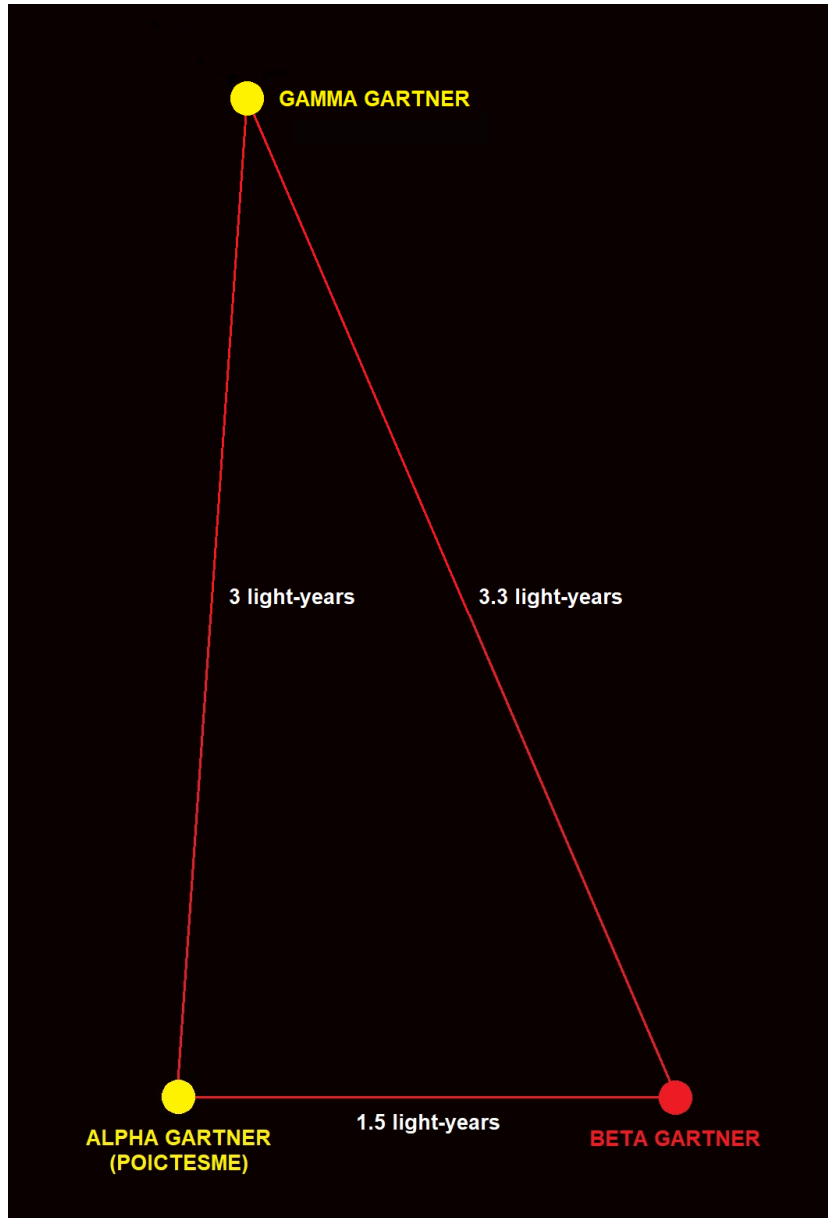


Figure 21. Postulated configuration of the Gartner Trisystem, a possible 'Autumn Triangle'.⁵²³

The feeling I get from *The Cosmic Computer* is that the Trisystem is not just on the frontier of the Federation, but not very close to other systems. The description of the Summer Triangle having “few other bright stars in its vicinity” could therefore apply here too, perhaps just leaving out the word ‘bright’.

Piper's story also begins and ends in autumn, around the time of the Poictesmean melon harvest. Thus, it occurs the period from the autumn of AE 894 to the autumn of AE 896. The Federation itself is well over 800 years old, and has only 200 years of life left. One gets the sense that we are in the

'evening glow' of the Federation, what could be considered its 'autumn'. This was probably deliberate on Beam's part, and assuming the connection with Vega is correct, the Gartner Trisystem could therefore be called the 'Autumn Triangle'. Autumn follows summer, Piper followed Asimov, and his (deduced) Autumn Triangle, the Trisystem, therefore follows Isaac's Vega, part of the Summer Triangle.

And finally, if this parallel is correct, then many millennia later, Poictesmean tobacco may become renowned throughout the Galaxy during Piper's Fifth Galactic Empire, just as Vegan tobacco is during Asimov's First Galactic Empire.

Appendix 5. The ‘Seven Worlds War’ and the New Merlin Plan

At the end of *The Cosmic Computer*, Merlin computes that “*the best course to be followed by the people of Poictesme*” involves “*Falsification*”. Merlin’s handlers will falsify its results, thereby leaving the people of the Terran Federation in ignorance of the Federation’s impending doom. This will prevent them from “all go[ing] down together in the same bloody shambles” in “a bomb-type reaction” at the news.⁵²⁴ Meanwhile, Poictesme will begin creating a new Federation to replace it.

Even though the Merlin Plan later fails, it did not exist at the time of the original prediction of doom, back in AE 854. So General Shanlee’s statement about the eventual rise of a new universal state should come true. “Left in ignorance, there might be a planet here and there that would keep enough of the old civilization to serve, in five or so centuries, as a nucleus for a new one.”⁵²⁵ A new nucleus should therefore arise around five centuries after AE 854. AE 854 is the Ninth Century; adding 500 years takes us to AE 1354; the mid-Fourteenth Century. And in that century, a major event happens, involving Marduk. Not coincidentally, Marduk is one of the few fully civilized planets left after the Interstellar Wars, those “which had maintained the culture of the Terran Federation uninterruptedly”.⁵²⁶

According to “The Future History”, Beam placed *Space Viking* in the “Early XVIII Century”.⁵²⁷ That would mean it begins about AE 1705. Some years pass as the story progresses, during which Lucas Trask recivilizes Tanith, develops a trade network with other planets, and organizes the allied fleet which liberates Marduk. So we should now be somewhere around AE 1710 or 1715. And at this time, when discussing whether the Moonbase of Marduk can withstand the Dunnan-Makann attempt to wrest it from his loyalist supporters, Prince Bentrik says that “It’s a strong base. It was built *four hundred years ago*, when Marduk was fighting a combination of six other planets. It held out against continual attack, once, for almost a year. It’s been constantly strengthened ever since.”⁵²⁸

AE 1710 or 1715 minus 400 years would place us around AE 1310 or 1315; the early Fourteenth Century. This of course is not far from AE 1354, our estimated date for the nucleus of a new universal state to appear. It’s actually about 40 years earlier, similar to how the System States War ends 40 year before the beginning of *The Cosmic Computer*. And Piper’s five “or so” centuries implies a margin of error anyway, either side of AE 1354. Assuming that Marduk is the new nucleus, what an appearance it makes! For in the ‘Seven Worlds War’, one planet, Marduk, holds off a combination of six others! That would seem to be a very significant achievement; an important event in Terro-Human history.

As shown in **Appendix 1**, this war seems to parallel the First Foundation’s war with Kalgan, in which the Seldon Plan was rescued and put back on track. Like the Seldon Plan, the rescue of the Merlin Plan may therefore also involve an interstellar war. Piper is not explicit, but the fact that the Moonbase holds out against continuous attack for almost a whole year seems to mean that Marduk wins the war. If so, that would also parallel Asimov, in which Kalgan is defeated by the First Foundation.

The ‘siege’ of the Moonbase, and by extension Marduk (Piper’s physical nucleus, or ‘first foundation’), has another parallel in Asimov. Because the First Foundation, Terminus, comes under siege at least once. In the war between Foundation and Empire, the Galactic Empire’s forces, commanded by General Bel Riose, successfully complete “the Previous Inclosure”; a strategy which basically cuts Terminus off from any outside help. The Foundation is trapped and seemingly doomed to fall to the Empire, because “there is no case in military history where an inclosure has been completed that the attacking forces have not eventually won, except where an outside Navy exists in sufficient force to break the Inclosure.” The Imperial forces then advance to “the outer suns of Loris”. Soon afterward, they conquer Loris itself, “the capital planet of the Kingdom of Loris”. Loris is one of the Four Kingdoms surrounding Terminus, and Lathan Devers calls them the Foundation’s “inner line of defense.”⁵²⁹

Similarly, the Moonbase of Marduk seems to be the planet’s inner line of defense. “Marduk had three moons; a big one, 1500 miles in diameter, and two insignificant twenty-mile chunks of rock. The big one was fortified, and a couple of ships were in orbit around it.”⁵³⁰ Naturally, the Moonbase is carried along the satellite’s orbital path, which describes a circle around the planet. Making this more like Marduk’s inner *ring* of defense. And just as the Foundation is trapped and seemingly helpless within the Previous Inclosure, Marduk has its back to the wall, surrounded by the combined forces of six other planets, and seemingly doomed to fall. Yet, also like the Foundation, Marduk apparently wins the war against what look like insurmountable odds.

Right after General Shanlee mentions the new “nucleus”, he makes another statement about this period, relating it to Merlin. “Besides, there was a chance that [Merlin] might survive the Federation; *when a new civilization arose it would be useful.*”⁵³¹ Thus, the apparent defeat by Marduk of six other planets seems to be the time when Merlin (now on Gilgamesh) will become useful again.

I therefore conclude that this ‘Seven Worlds War’ is the event in which the Merlin Plan is rescued. Or perhaps more precisely, the *new* or *revised* Merlin Plan begins. Poictesme failed, so now Marduk will be the planet, aided by Merlin and Gilgamesh, to establish the next Universal State. The Merlin Plan may be revised before the Seven Worlds War (the failure on Poictesme causes a new computation by Merlin, resulting in a verdict in favor of Marduk), or after it (upon Marduk’s presumed victory, Merlin computes that Marduk is now the best option for creating the new Universal State).⁵³² Either one suggests that Gilgamesh has been aiding Marduk for several centuries—much longer than is implied in *Space Viking*.

Can we deduce more about the timeline of events? We know that Gilgamesh undergoes “two centuries of darkness”; this probably coincides with the Interstellar Wars, which last from AE 1000 to 1200. Merlin relocates from Poictesme sometime during that span, possibly around AE 1100. That would mean Merlin becomes Yah the Almighty at that point, and helps the Gilgameshers “pull themselves out of [the new Dark Age] by their bootstraps”. So that by AE 1200 or so, Gilgamesh could be fully recivilized, and begins sending out hyperdrive trade ships. It would be safe for them to do so, since by that time the Interstellar Wars have ended. Over the next century or so, the Gilgameshers gather enough information on the various planets of the Old Federation for Merlin to begin making predictions again. Not long after this, somewhere between AE 1310 and 1350, Marduk apparently defeats 6 other planets, an event that could have been predicted by Merlin, or at least one which leads Merlin to compute that Marduk has the best chance—or is the right planet—to create the new Universal State.

Possibly followed by Odin, which may be Merlin’s second choice; the planet with the *next* best odds for success. Because it is interesting that, in addition to the Seven Worlds War, Marduk also fought a war with Odin. And in this case, it was not only inconclusive but practically non-violent. Count Steven of Ravary says to Prince Trask, “I won’t fight you.” Trask replies, “And I won’t fight you either, Count. We’ll make a lot of fireworks, and then we’ll each go home and claim victory. How would that be?” Captain Rainer adds, “I’ve heard of things like that...We had a war with Odin, seventy years ago, that was mostly that sort of battles.”⁵³³

Neither Odin nor Marduk were damaged in this ‘war’, and Odin later becomes the capital planet of the Galactic Empire, when Emperor Stevan IV transfers the throne from Marduk.⁵³⁴ It may therefore not be a coincidence that both planets claimed victory in their phony war, because they both do ‘win’; each in turn becomes the capital of the First Galactic Empire.

Moreover, this peaceful transfer of power from Marduk, located out toward the periphery of the Old Federation, to Odin, “close to the center of human worlds”,⁵³⁵ may also be part of the revised Merlin Plan. And why? Because the Seldon Plan in Asimov will involve the peaceful transfer of the capital of the Second Galactic Empire from Terminus, out on the Periphery, to Trantor at the center of the Galaxy. Moreover, a ‘hot’ war between Marduk and Odin could have resulted in the destruction of one or both, thereby preventing, or at least delaying for centuries, the establishment of a new Universal State. Not a desirable outcome from the Merlin Plan’s point of view.

The approximate dates for this timeline would run as follows.

AE 854 Merlin predicts that “a nucleus for a new” civilization will arise “in five or so centuries”. That would be circa AE 1354; the mid-Fourteenth Century.

AE 1000 The Interstellar Wars begin, Gilgamesh enters two centuries of darkness.

AE 1097 The Terran Federation disappears.

AE 1100 The Merlin Plan fails; Poictesme is devastated, and Merlin is relocated to Gilgamesh.

AE 1200 The Interstellar Wars end. After a century of recivilizing with Merlin’s help, Gilgamesh regains hyperdrive, and now that the starways are becoming safe again, it begins sending out trade ships, whose real purpose is to gather intelligence on all Old Federation planets.

AE 1215 Gilgamesh has established colonies on Marduk, and on the other fully civilized worlds.

AE 1315 The 'Seven Worlds War'; Marduk presumably defeats the combined forces of six other planets. It then becomes the second "nucleus for a new" Universal State, and pretty much right on time, "five or so centuries" after Merlin first predicted it. Merlin becomes "useful" again; the Merlin Plan is rescued, or the new or revised Merlin Plan begins.

Appendix 6. Parallel Interregnum Governments

In both Asimov's and Piper's interregnum periods, we see the reappearance of various forms of government. In particular, feudal monarchies; but also theocracies, faux-republics and unions.

a) Feudal Monarchies; the Four Kingdoms, Marduk and the Sword-Worlds

In Asimov, the independence of the Galactic Periphery results in the establishment of at least some feudal monarchies. The Kingdom of Anacreon is "the largest and most powerful" of the Four Kingdoms that surround Terminus. The others are Smyrno, Konom, and Daribow; Isaac later added a 'fifth' one, Loris.⁵³⁶ These kingdoms arise at the beginning of the Empire's collapse, and in Anacreon's case are run by noblemen like Anselm haut Rodric, Lord Wienis, and King Lepold.

One gets the sense that most of the newly-independent polities of the galaxy are feudal in nature. And this would be due to Asimov's historical model, the fall of the Roman Empire and feudal dark age which followed, as seen in **Appendix 1**.

In Piper, the breakup of the Terran Federation results in the creation of at least one major monarchy; the Planetary Kingdom of Marduk. Marduk was one of the System States,⁵³⁷ the planets of which seem to be located toward the periphery of the Federation, just as Asimov's Four Kingdoms are in relation to the Galactic Empire. There are undoubtedly other kingdoms in the Old Federation; especially among the fully civilized worlds like "Odin and Baldur and Isis and Ishtar and Aton".⁵³⁸ These major planets would parallel the major kingdoms which arose in Europe after the fall of the Roman Empire; such as France, Spain, England and Germany. Indeed, we've already seen that Marduk itself parallels Germany.

And beyond the Federation's pale are the Sword-Worlds, an undeniably feudal group of planetary states. When told about their political system, Prince Simon Bentrík of Marduk says, "Why, it sounds like feudalism to me!" To which Prince Trask replies, "That's right; that's what it is."⁵³⁹ These planetary kingdoms are run by noblemen like King Angus of Gram, King Napolyon of Flamberge, and King Rodolf of Excalibur. Marduk itself is reigned over by King Mikhyll VIII, whose son is Crown Prince Edvard, and grandson is Count Stephen of Ravary.

This might be a good place to note the parallel use of first names common to our time, but whose spelling has changed in the future. In the Foundation trilogy, Asimov gives us Hari (Harry), Lewis (Louis), Tomaz (Thomas) Yohan (Johan), Jaim (James or Jim), Lepold (Leopold), Homir (Homer) and Jole (Joel). In Piper they are more plentiful, including Sesar (Caesar), Andray (Andre), Nikkolay (Nikolai), Viktor (Victor), Sharll (Charles), Alvyn (Alvin), Paytrick (Patrick), Maniwel (Manuel), Stafan (variant of Stephen), Rodolf (Rudolf or Rudolph), Napolyon (Napoleon), Mikhyll (Michael), Edvard (Edward) and Pyairr (Pierre).

b) Theocracies; Askone and Gilgamesh

After the Foundation establishes religious control over the neighboring Four Kingdoms, its traders move outward, expanding Terminus' influence through economics as well as religion. A hard nut to crack is the planet Askone. Askone's political system is also based on religion, the religion in this case being "a form of ancestor worship." In fact, Asimov seems to have modeled the Askonians on the Jews. The rulers of Askone are mainly descendants of "the Five Tribes", which seems similar to the Twelve Tribes of ancient Israel. Like the historic "Chosen People", who believed themselves superior to the other nations and religions of the Near East, the Askonians are intolerant of off-worlders. This includes the Foundation agent Eskel Gorov, described by the Askonians as a "sacrilegious wretch"; and the planet itself is actually closed to traders from Terminus.⁵⁴⁰

Part of Askone's intolerance is due to their religion being anti-atomic. Thus, atomic-powered trade goods from the Foundation "are worthless in that they lack the ancestral blessing. Your goods are wicked and accursed in that they lie under the ancestral interdict." "Anyone caught violating the anti-atomic edicts could be faced by "a million fanatical Askonians", ready "to tear him to pieces". To those who manage to avoid the fanatics, an Askonian court can still sentence them to "Death by gas."⁵⁴¹

The planetary leadership of Askone comes exclusively from the Five Tribes. But the one thing all Askonian leaders love—as well as does the stereotypical Jew—is gold. A large sum of gold gets Eskel Gorov and Limmar Ponyets out of their jam on Askone.⁵⁴²

In Piper, the fall of the Federation results in at least one theocracy. This is Gilgamesh, the planet of Piper's Jews. Beam gives no indication of its internal political configuration, such as if it is a union of different tribes, like Askone. Only that "their society seemed to be a loose theo-socialism", and its people "were able and willing to fight with fanatical ferocity in defense of their home planet." Like Askonians, Gilgameshers are intolerant of off-worlders. When a ship from Gilgamesh arrives in orbit around Tanith, "three of them came down to do business... They all had the same righteous, disapproving faces, they all refused refreshments of any sort, and they sat uneasily as though fearing contamination from the heathens who had sat in their chairs before them." Moreover, when relating a Space Viking raid on Chermosh, the Gilgameshers have no sympathy for the victims. "The Chermoshers are heathens and worshippers of false gods. The Space Vikings looted their temple and destroyed it utterly; they carried away the graven images and abominations. Our people bore witness that there was much wailing and lamentation among the idolators." ⁵⁴³

They also do not welcome off-worlders to their planet. At least, from the fact that Gilgameshers are "generally disliked" by the rest of the galaxy, one gets the sense that no sane person would particularly want to visit their home world; and even if they did, their welcome would not be warm.

One major difference with Askone, however, is that Gilgamesh is not averse to technology. They have an atomic-powered economy, just like the other civilized planets. A second major difference is trade. The Askonians pretty much keep to themselves; it is the Foundation that persists in trying to open their markets to atomic goods. But in Piper, interstellar trade is the sole (overt) pursuit of the Gilgameshers, resulting in hefty sums of money which are mostly sent back home. ⁵⁴⁴

In creating the Gilgameshers, Beam may therefore have cleverly combined the Askonians with the Foundation's Independent Traders. Gilgamesh is a theo-socialist planet, and at the time of "The Traders", both Askone and the Foundation are ruled by religion. The Foundation's Traders are the vanguard and missionaries of "a religion-controlled commercial empire", ⁵⁴⁵ and Gilgamesh possesses what could be called an interstellar, religion-controlled commercial empire as well.

Unlike the Foundation, however, Gilgamesh does not control the planets of its commercial empire. But assuming that Gilgamesh is aiding Marduk in creating the next Universal State, one goal of its trade network is to promote economic integration, which will be followed by political unification.

c) Faux-Republics; Korell and Aton

In Asimov's early post-Imperial period, other forms of government also reappear. This includes the Republic of Korell, which is actually a nasty dictatorship. Hober Mallow tells Jorane Sutt that "I've been there. Stinking rathole! I suppose you can call it a republic but it's always someone from out of the Argo family that gets elected Commdor each time. And if you ever don't like it—*things* happen to you." Thus, "Korell is that frequent phenomenon in history: the republic whose ruler has every attribute of the absolute monarch but the name." ⁵⁴⁶

And in Piper's post-Federation period, the other forms of government include the Planetary Republic of Aton, which is actually a dictatorship. "The Republic's a dictatorship, now, and just between Goodman Mikhyll and Goodman Lucas it's a damned nasty one and our Majesty's Government doesn't like it at all." But the dictatorship won't last. Mikhyll continues by saying that "It will be smashed, those kinds of things usually are, sooner or later". ⁵⁴⁷

In turn, the end of Aton's dictatorship parallels the Republic of Korell, whose dictatorship apparently doesn't last. Several years after Hober Mallow converts Korell's fossil-fuel industries back to atomic power, the dictator, Commdor Asper Argo, decides to attack the Foundation. Mallow, now Mayor of Terminus, cuts off all trade with Korell, whose economy has become dependent on Terminus. He foresees that "Asper Argo won't stand up against the economic depression that will sweep all Korell in two or three years." And he's right, because "*after three years of a war which was certainly the most unfought war on record, the Republic of Korell surrendered unconditionally, and Hober Mallow took his place next to Hari Seldon and Salvor Hardin in the hearts of the people of the Foundation.*" ⁵⁴⁸

After Korell surrenders, the dictatorship of Asper Argo will almost certainly fall, but what takes its place Asimov doesn't say. The "Republic" could become a republic in fact as well as name. However, Mayor Mallow turns Terminus, which since Salvor Hardin's time has had a democratic form of government, into a

plutocracy; and the Mayors later become hereditary.⁵⁴⁹ So Korell may follow suit; “the republic whose ruler has every attribute of the absolute monarch but the name” could shed its republican mask to openly become an absolute monarchy.

If that occurs, then Korell would once again be paralleled by Aton; because at some point between *Space Viking* and the First Galactic Empire story “A Slave is a Slave”, the dictatorial ‘republic’ on Aton is replaced by a planetary monarchy. Its noblemen include people like “old Errol, Duke of Yorvoy”, head of “the ultra-conservative Erskylls of Aton”. One of Errol’s family members is “young Obray, Count Erskyll”. In “Slave”, moreover, Count Erskyll becomes the Imperial Proconsul on Aditya.⁵⁵⁰

The parallel with Korell also includes the leader’s title. As stated, Korell is ruled by a Commdor, and this is obviously derived from Commodore. As the Galactic Empire began disintegrating along the Periphery, the local Imperial Navy commander presumably took control of Korell; his rank becoming the title of the rulers who followed him. And in Piper, the Atonian Count Erskyll travels to Aditya with a fleet commanded by “Line-Commodore Vann Shatrak”.⁵⁵¹

We can add that the “most unfought war on record” between Korell and the Foundation sounds similar to the ‘phony’ war between Odin and Marduk, in which hardly any fighting occurs. The Foundation is of course the ‘First’ Foundation, which will become the physical nucleus of the next universal state, the Second Galactic Empire. And after the failure of Poictesme, Marduk is the new physical nucleus, or ‘first foundation’, of Piper’s next universal state, the First Galactic Empire.

d) First Citizens and Unions; Kalgan and Aditya

A third post-Imperial government in Asimov is the Kalganian Union, originally a peaceful, neutral state. “Kalgan was the luxury world...a producer of pleasure, a buyer of gold and a seller of leisure.” Because of this, “It escaped the harsher vicissitudes of history” following the end of the Galactic Empire. But only for a while. “Yet even Kalgan had finally become the headquarters of a warlord and its softness had been tempered to the exigencies of war.” This first warlord is Converted by the Mule, who makes him his viceroy.⁵⁵²

In Piper, a third post-Federation government is that of Aditya, currently a peaceful and neutral planet, mainly because it has no contact with other worlds. Aditya “had seceded from or been abandoned by the Federation, then breaking up.” Because of its isolation, it essentially “escaped the harsher vicissitudes of history” following the end of the Terran Federation. But only for a while, because eventually it is taken over by warlords. “The Adityans...had been near-barbarians; the descendants of the original settlers had been serfs of other barbarians who had come as mercenaries in the service of one or another of the local chieftains and had remained to loot and rule.” Then the Space Vikings arrive, and reintroduce slavery; replacing the warlords with a “Mastership”.

For these Space Viking Masters lording it over their slaves, life becomes easy. They descend into a decadent lifestyle of leisure and the pursuit of pleasure, which involves “feasting, making love to each other’s wives, being entertained by slave performers, and feuding for social precedence like wealthy old ladies on Odin.”

Of course, there are differences. Aditya is not a pleasure world in the same way as Kalgan. It has had no contact with the rest of the known galaxy for five hundred years, so people don’t flock from other planets to sample its attractions! Quite the opposite, in fact. For while “trying to remember” what he knows about Aditya, Galactic Emperor Paul XXII muses that its government is “Something unpleasant, he thought; the titles of the government [Planetary Commonwealth] and its head [First Citizen, the People’s Manager-in-Chief] were suggestive.”⁵⁵³

However, this first glance at Aditya may not show the whole picture. So let’s take a further look at its parallels with Kalgan.

In Asimov, the Mule styles his empire the “Union of Worlds” and takes upon himself the title of “First Citizen of the Union”. His intention is to reunite the galaxy now, rather than taking another seven hundred years, which it would require under the Seldon Plan. Expansion occurs until the Union of Worlds includes “one-tenth the volume of the Galaxy and one-fifteenth of its population”, thereby creating the first state since the Galactic Empire “with a unified volume of space truly imperial in scope”. Although his empire crumbles upon his death not many years later, the Mule’s title is retained by his successors on Kalgan. These include General Han Pritcher, First Citizen Thallos and First Citizen Lord Stettin.⁵⁵⁴

When Piper's First Galactic Empire finally comes calling, the Viking-ruled "Mastership of Aditya" is overthrown by the former slaves and replaced by a neo-communist state, run by men like "First Citizen Zhorzh Yaggo".⁵⁵⁵ Although it is called "the Planetary Commonwealth of Aditya", the Soviet flavor of the regime would make the name 'Adityan Union' a suitable alternate. As in the Adityan 'Soviet' Union.

Moreover, in his two Galactic Empire stories, Piper seems to imply that Adityan communism will eventually overthrow the Imperial government, and attempt to replace it with a 'Galactic Commonwealth', which could also be called a 'Galactic Union'. A Union of Worlds, in effect.⁵⁵⁶ Aditya is but a single planet, and a poorly-run one at that, but it has the potential to shake the known galaxy, like Kalgan.

First, the Empire takes over Aditya because "The Galaxy is not big enough for any competition of sovereignty. There must be one and only one completely sovereign power." Once they learn about the decrepit conditions on the planet, Prince Trevannion muses that "Aditya would make nobody on any other planet trouble. It wouldn't have, at least for a long time, even if it had been left unannexed, but *no planet inhabited by Terro-humans could be trusted to remain permanently peaceful and isolated. There is a spark of aggressive ambition in every Terro-human people, no matter how debased, which may smolder for centuries or even millenia and then burst, fanned by some wind, into flame.*"⁵⁵⁷

Communism is an aggressive, supremacist system, and by the time of "Ministry of Disturbance", 900 years later, the People's Commonwealth has been smoldering on Aditya for almost a millenium.

Second, in "Ministry", the Emperor promotes new scientific research, beginning with the "Instantaneity" of beta-micropositos by Professor Klenn Faress. Prince Travann indicates what this research will produce. "If he can propagate a wave that behaves like those micropositos, we may not have to depend on ships for communication. We may be able, some day, to screen Baldur or Vishnu or Aton or Thor as easily as you screened Dorflay, up in the mountains."⁵⁵⁸

Instantaneous communications will certainly have many benefits. But one of their negative effects will be the swift and easy spread of totalitarian ideologies, like that the People's Commonwealth. Formerly contained on Aditya, communism could then be spread throughout the Galactic Empire. Another minus is that it will now be possible to coordinate uprisings on multiple planets at the same time. Effectively impossible before, an interstellar or Galactic revolution can now occur.

And third, the slaves of Aditya in "A Slave is a Slave" are paralleled by the people of the Galactic Empire in "Ministry of Disturbance", who have become docile after centuries of benevolent rule by the Imperial government. Emperor Paul XXII presides over "a peaceful and undisturbed Empire; eight centuries, five at least, of historyless tranquility. Well, that was what everybody wanted, wasn't it?" Unfortunately, this has resulted in large numbers of people losing their normal initiative, their inner drive and even their free will. As Paul puts it, "If only so many people didn't act like robots!"⁵⁵⁹

Robots are mindless mechanical servants, owned as property, which do whatever task is required by their human masters. They are serfs, *slaves*. What Paul is actually saying is that a large proportion of the Empire's citizens are acting like slaves. They are in a self-imposed bondage to a system which has pampered them for hundreds of years.

So what we essentially have here is a slave-state (the Galactic Empire), a communist ideology which is purportedly against slavery (the People's Commonwealth of Aditya), and the means for this ideology to be easily spread throughout the Empire (instantaneous communications). The revolution on Aditya in "Slave", which involved the massacre of the slave-owning Lords-Master and the creation of the so-called People's Commonwealth, may therefore be paralleled by a Galactic Revolution sometime after "Ministry", in which the 'slaves' of the Galactic Empire will rise and massacre the ruling class of nobles, followed by the creation of a 'Galactic Commonwealth'. However, the Soviet flavor of the regime would make the name 'Galactic Union' a suitable alternate. As in the Galactic 'Soviet' Union.

The deduced Galactic Commonwealth or Union will presumably be ruled by a 'First Citizen', just like on Aditya—and just like the First Citizen (the Mule) and his Union of Worlds in Asimov.

The communism on Aditya, and the deduced communism which spreads in the later stages of Piper's First Galactic Empire, may also be related to Asimov. Because Donald Wollheim calls psychohistory, which is created in the last stages of Asimov's First Galactic Empire, "a...parallel...of...the Communist party which seeks through a set of theories based on the premises of a pseudo psychohistory known as Marxism to predict the movements of human masses and historical change." While Wollheim adds that "psychohistory is the science that Marxism never became",⁵⁶⁰ other critics of Asimov are not so kind.

“Professor Charles Elkins of Florida International University” concluded that psychohistory was “the vulgar, mechanical, debased version of Marxism promulgated in the Thirties.” To be fair, Asimov denied any debt to Marxism. He “called Wollheim’s speculations “reading his bent into me””,⁵⁶¹ and has said that the idea of psychohistory was derived as a combination of psychology, the kinetic theory of gasses, and symbolic logic.

In a letter to H. Beam Piper, John W. Campbell, who published *Space Viking* in the pages of *Analog*, had this to say about the story which Beam set after the fall of the Terran Federation. “One of the beauties of the set-up you’ve got is that it allows the exploration of cultures of almost all conceivable levels of complexity and technology.”⁵⁶²

Apparently, Campbell didn’t realize that this is pretty much the same beauty we see in the Foundation series! For after the fall of the Galactic Empire, one certainly gets the sense that its 25 million inhabited planets adopt a great variety of governmental types, and develop “cultures of almost all conceivable levels of complexity and technology.” This variety is found in Asimov’s descriptions of Terminus, Anacreon, Askone, Korell, Siwenna, Haven, Kalgan, Neotrantor and (after the Great Sack) Trantor.

Few of these 25 million worlds are revealed in the series, because Asimov had a minimalist style of writing, and left much more implied than he put into words. The above list is pretty much it; a mere nine worlds, or an average of three per book in the Foundation Trilogy. Piper, however, seems to have put much more effort into his galaxy. In *Space Viking*, we are given various levels of detail about the worlds of Gram, Tanith, Khepera, Amaterasu, Beowulf, Gilgamesh, Tetragrammaton, Audhumla and Marduk. Nine planets in just one book!

Appendix 7. Shakespearean First Citizens

There seems to be a Shakespearean connection between Asimov's and Piper's First Citizens.

Asimov's First Citizen is the Mule, who can be considered the main villain of the Foundation novels. He disrupts the Seldon Plan almost to the point of irretrievability, and the entire second half of the classic series involves his rise, immobilization, and aftermath.

Piper's First Citizen is Zhorzh Yaggo, whose surname is certainly a future corrupted form of 'Iago', the main villain in Shakespeare's *Othello*.

Two first citizens, two main villains, one with a Shakespearean name.

But we recall that 'Mule' is only a nickname. His real name is Magnifico Giganticus, which is usually shortened to Magnifico.⁵⁶³ And in Shakespeare's *Othello*, a 'magnifico' is "a prominent citizen and landowner in Venice."⁵⁶⁴ The most notable magnifico in the play is Brabantio, the father of Desdemona, the lady whom Iago plots against.

For Magnifico to call himself a 'First Citizen' (prominent landowner) therefore seems perfectly appropriate. And now we see that *both* main villains have a Shakespearean name. So let's introduce Magnifico (Asimov's First Citizen) to his literary daughter's nemesis, Yaggo (Piper's First Citizen).

The Foundation stories were published in the 1940s, and reached their final book form in 1951. Piper's story "Ministry of Disturbance", in which Zhorzh Yaggo appears, was published in 1958. Thus, Beam's use of 'Yaggo' seems to be a subtle and deliberate tie-in with Asimov through Shakespeare. Isaac created First Citizen Magnifico, and Piper's response was to create First Citizen Yaggo.

I am not aware of how Isaac came up with the name Magnifico. But since *Othello* takes place in medieval Venice, and Asimov's post-Imperial Foundation period parallels the post-Roman Medieval period, it is quite possible that he had the Shakespearean usage in mind. Because Magnifico the Mule becomes the most prominent man in the Galaxy, and the greatest landowner, since his Union of Worlds controls more territory than any state since the First Empire. His title of First Citizen and surname Giganticus supports this line of reasoning. First Citizen Magnifico Giganticus is actually 'the most prominent citizen and most gigantic landowner in the post-Imperial Galaxy'.

In Shakespeare, Iago is not a prominent citizen and landowner in Venice, in contrast to the illustrious magnifico, Brabantio. It is therefore no surprise that Piper's First Citizen Yaggo is not a prominent citizen and landowner in the galaxy, in contrast to Asimov's First Citizen, Magnifico Giganticus. Since the planet Aditya is a neocommunist state, private property is certainly outlawed; everything (theoretically) belongs to everyone. As one former slave puts it, Aditya's new communist government "will belong to everybody. But somebody will have to take care of it for everybody. That...will be you and me and the rest of us here."⁵⁶⁵

And even though Yaggo runs the whole planet, and indeed, the entire Adityan system,⁵⁶⁶ he is still not a prominent person. Because Aditya is merely one of 1365 planets in the First Galactic Empire, and an insignificant one at that. In "Ministry of Disturbance", Yaggo and his fellow planetary ruler, the effeminate King Ranulf XIV of Durendal, visit the Imperial capital on Odin. Yaggo gets into an argument over precedence with Lord Koreff, Marshall to King Ranulf. "Lord Koreff insists that his king is not going to yield precedence to a commoner."⁵⁶⁷ Yaggo agrees, in exchange for being seated next to the Galactic Emperor that evening, at a banquet, reception and ball being held in their honor. But at the banquet, Yaggo's repeated attempts to extoll the alleged virtues of Aditya's communist system are sarcastically belittled by "an elderly Counselor" of the Imperial Court.⁵⁶⁸

The connection is also supported by the relative historical period. Asimov has his galactic First Citizen appear when the First Galactic Empire is not quite finished; a small remnant still exists, based on Neotrantor. In fact, First Citizen Magnifico himself kills Prince Dagobert, the son of the Emperor.⁵⁶⁹

Piper has his planetary First Citizen appear when his First Galactic Empire is still rising and expanding. However, if the deductions in **Appendix 6** are correct, his *galactic* First Citizen will appear as his First Galactic Empire is falling, just like Asimov. And paralleling Lenin, who had the Russian Imperial Family murdered, Beam's First Citizen may well order the massacre of the Galactic Imperial Family.

So now, let's compare Shakespeare, Asimov and Piper.

Shakespeare's <i>Othello</i>	Asimov's <i>Foundation</i>	Piper's <i>Future History</i>
Iago (the main villain, not a prominent citizen or landowner in medieval Venice.)		First Citizen Zhorzh Yaggo (the main villain on Aditya, but not a prominent citizen or landowner in the 'medieval' Galaxy)
magnifico Brabantio (a prominent citizen and landowner in medieval Venice)	First Citizen Magnifico Giganticus (aka, the Mule; the most prominent citizen and landowner in the 'medieval' Galaxy, and the main villain in the series. He murders Prince Dagobert, son of the Galactic Emperor.)	Deduced galactic First Citizen sometime after "Ministry of Disturbance". A major villain who overthrows the Imperial government, and briefly replaces it with a communistic Commonwealth or Union. Among his crimes may be the massacre of the Galactic Imperial Family.

Thus, Asimov's 'Magnifico' appears to mainly parallel the high-born Brabantio, with the villainous side of Iago added. Piper appears to have taken the opposite tack, by having his villain Yaggo mainly parallel Iago, with the landowning side of Brabantio added. In other words, Asimov took the high road, so Piper supplied the low. Possibly another example of his 'complementary' approach.

In support of this section, it is known that both authors were fans of Shakespeare. Isaac's short story "The Immortal Bard", "is an expression of Asimov's own deep admiration for William Shakespeare", and he later wrote the two-volume *Asimov's Guide to Shakespeare*.⁵⁷⁰

And in a telephone interview with John Carr, John McGuire, Jr., whose father collaborated with Piper on several stories, said that "They were very much into the Elizabethans, especially William Shakespeare. Beam loved how Shakespeare wrote *both for the highborn and the pit*. They looked for plots in his plays and sometimes their stories would be titled with Shakespearean quotes." In another such interview, his younger sibling Terry McGuire added that "Beam wanted to be Shakespeare. He would have us kids memorize Shakespeare's lines and speak out the various parts. We acted out *Hamlet*, and *King Lear*—Beam's favorite." Piper also had them perform *Romeo and Juliet*.⁵⁷¹

Hamlet, *King Lear*, and *Romeo and Juliet* are all tragedies. And so is *Othello*. Since Asimov included the villainous aspect of Iago in the Mule (First Citizen Magnifico), Piper may well have intended for First Citizen Yaggo to become a major villain, involved in some tragedy. Thus, the Shakespeare angle lends support to the deduction that Yaggo's appearance in "Ministry of Disturbance" is the foreshadowing of greater villainy to come, coincident with the crumbling of the First Galactic Empire.

Appendix 8. A Brief List of the Personal-Group Parallels

As stated in the section *Piper's Doubles*, Beam seems to have included analogs of all of Asimov's 'capitalized' characters, whose titles provide the names for the individual stories. These include the Psychohistorians, the Encyclopedists, the Mayors, the Traders, the Merchant Princes, the Generals and (as shown in **Appendix 2**) even the Mule. It occurs to me that a brief list might be desirable. In Asimov's chronological order, they would look like this.

- a) **The Psychohistorians 1:** Hari Seldon and Foxx Travis
- b) **The Encyclopedists:** Dr. Louis Pirenne and Prof. Dolf Kellton
- c) **The Mayors:** Salvor Hardin and Kurt Fawzi
- d) **The Traders:** Limmar Ponyets and Yves Jacquemont
- e) **The Merchant Princes:** Hober Mallow and Rodney Maxwell
- f) **The Generals:** Bel Riose and Foxx Travis, Han Pritcher and Mike Shanlee
- g) **The Psychohistorians 2:** Hari Seldon and Mike Shanlee, Gaal Dornick and Conn Maxwell
- h) **The Mules:** Magnifico Giganticus and Jethro Sastraman

Appendix 9. “You Will Be Faced With a Series of Crises”

a) Space Viking—Another ‘Merlin Crisis’?

In section 20, **Both Recordings Connected with Crisis**, we saw that the events in *The Cosmic Computer* could be called the first ‘Merlin Crisis’. At some point after that crisis is resolved, we know that the Merlin Plan fails, paralleling the failure of the Seldon Plan; and in **Appendix 5**, we saw that the new or revised Merlin Plan probably begins circa AE 1315, with the successful conclusion of the ‘Seven Worlds War’. Since this war between Marduk and six other planets seems to get the Merlin Plan back on track, it parallels the events in *Second Foundation*, in which the Seldon Plan is rescued. A rescue which similarly involves a war against a stronger foe; the Foundation versus Kalgan and its associated Union of Worlds.

In Asimov, there is more than one Seldon Crisis. We recall that in his first Time Vault appearance, Hari Seldon tells the leaders of Terminus that “You will be faced with a series of crises, as you are now faced by the first, and in each case your freedom of action will become similarly circumscribed so that you will be forced along one, and only one, path.”⁵⁷² In the classic series, a total of five Seldon Crises are described. The first two are against Anacreon, the third against Korell, the fourth against the Galactic Empire, and the fifth against the Independent Traders. The fifth one is interrupted by the Mule, however, who is in the process of derailing the Seldon Plan.

Thus, if the present paper’s thesis is correct, there must be more than one ‘Merlin Crisis’ in Piper’s Future History. And there are some interesting parallels in *Space Viking*, a novel Beam begun less than a year after finishing *The Cosmic Computer*, but which takes place a little more than eight centuries later (AE 896, compared to circa AE 1705).

First, after the presumed destruction of Poictesme during the Interstellar Wars, Marduk was apparently chosen as its replacement to create the Second Universal State. Yet here we are, 800 years into the original Merlin Plan, and little or nothing has been done to achieve it! In *Space Viking*, Marduk has 14 trade planets, most of which only receive occasional visits by the Royal Navy. This means the Kingdom of Marduk encompasses 15 planets out of 500 in the Old Federation, a mere 3% of the total. Moreover, Marduk does not seem any stronger than any of the other fully civilized worlds; such as Odin (against whom Marduk once fought an inconclusive and even nonviolent war), Isis, Baldur and Ishtar.

By way of contrast, eight hundred years into the Seldon Plan should see Terminus as the supreme power in the Galaxy, controlling roughly 80% of it.

Second, Marduk’s rulers are weak. King Mikhyl VIII is a figurehead (“We’ve been whittling down and filching away the powers of the Throne for the last three centuries”), his son Crown Prince Edvard favors democracy over the monarchy (“He’s much opposed to class distinctions and caste prejudices. Says they have to be eliminated before we can make democracy really work”), and when organized blocks of fascist People’s Watchmen attack and murder a cordon of policemen guarding the Royal Palace in Malverton, there are no arrests. As Otto Harkaman later observes, “What they have on Marduk is a ruling class that has been discrediting itself. A ruling class that’s ashamed of its privileges and shirks its duties...And a ruling class that won’t use force to maintain its position. And...they are letting the enemies of democracy shelter themselves behind democratic safeguards.”⁵⁷³

Third, the Mardukan people themselves are weak. A Royal Navy captain tells Prince Trask, “We have too many people on Marduk, and all of them want soft jobs as nobles’ servants...Those that want any kind of jobs.” Not only are they lazy and complacent, they’re practically defenseless. “Combat weapons were almost unknown among the people... and even sporting arms uncommon.” The bottom layer of Mardukan society consists of the homemade barbarians; what Harkaman calls “The hitchhikers. The people who create nothing, and who don’t appreciate what others have created for them, and who think civilization is something that just exists and that all they need to do is enjoy what they can understand of it—luxuries, a high living standard, and easy work for high pay. Responsibilities? Phooey! What do they have a government for?”⁵⁷⁴

Even worse, these “barbarians are rising; they have a leader, and they’re uniting...the hitchhikers think they know more about the car than the people who designed it, so they’re going to grab the controls. Zaspas Makann says they can, and he’s the Leader.” It’s so bad that, even before Makann successfully takes control of the Mardukan government, Prince Trask tells the Crown Prince, “I’m sorry, Prince Edvard. You had a wonderful civilization here on Marduk. You could have made almost anything of it. But it’s too late now. You’ve torn down the gates; the barbarians are in.”⁵⁷⁵

In *Space Viking*, Marduk therefore seems to be facing an 'internal crisis', one of the two elements of a Seldon (or Merlin) Crisis. And true to form, it soon faces an 'external crisis' as well.

This is Andray Dunnan, a psychopath and megalomaniac from the Sword-Worlds, who is "convinced that he's the greatest Space Viking in history." He systematically raids Marduk's trade planets, but these 'raids' are so wantonly destructive that the word is inadequate. They are more accurately termed "terror-raids" by Captain Valkanhayn, and it becomes obvious that, as incredible as it seems, what Dunnan is really doing "is making war on Marduk". His strategy is, apparently, geared "to pull the Mardukan space-navy away from the home planet...and when he gets them all lured away, he'll make a fast raid". Since "you didn't raid civilized planets, not and get away with it", that will make him the first Space Viking in history to successfully raid one of the major civilized worlds.⁵⁷⁶

Just as in *The Cosmic Computer*, however, the internal and external threats are subtly connected; and in both cases, money and fascism are involved. In CC, the chaos on Poictesme is secretly funded from off-planet, by "Sam Murchison, the Terran Federation Minister-General." One group causing trouble is the Cybernarchists, who "started wearing colored-shirt uniforms and greeting each other with an archaic stiff-arm salute, and the words, "Hail Merlin!" " Their goal is for "Merlin to be the whole Government", which would result in Poictesme becoming a fascist planetary state.⁵⁷⁷

Piper's Foundations and the first Merlin Crisis

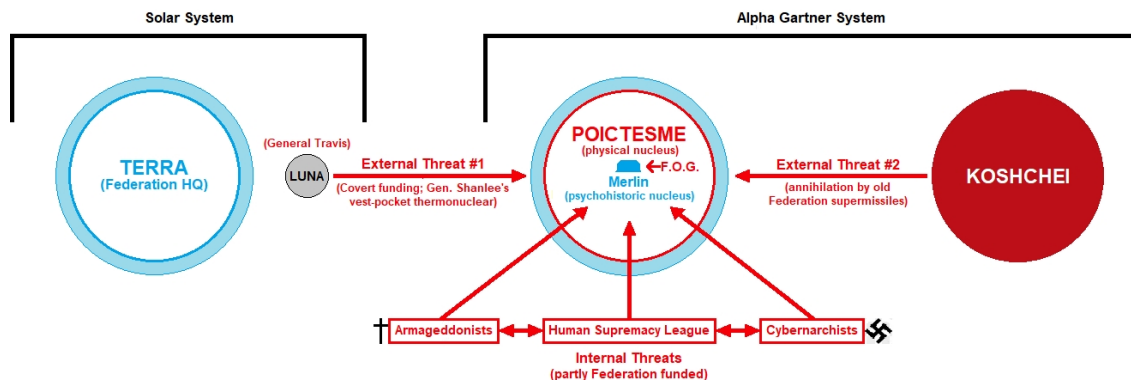


Figure 22. The first 'Merlin Crisis', with Merlin and Poictesme threatened by internal and external forces.

And in SV, the chaos on Marduk is secretly funded by Andray Dunnan, who backs Zaspas Makann and his Mardukan fascists. Makann's goal is to become the planetary "Leader" (Führer in German), which will give Marduk a fascist government. But although Dunnan backs Makann, his real goal is to rule Marduk himself. Prince Trask says, "We decided, long ago, that Dunnan was planning to raid Marduk. It appears that we underestimated him. He wasn't planning any raid; he was planning conquest, in the only way a great civilization can be conquered—by subversion...Dunnan financed [Makann], and moved in behind him, the same way Makann moved in behind the King. And Dunnan will have him shot the way [Makann] had Prince Edvard shot, and use the murder as a pretext to liquidate his personal followers." "And then he'll own Marduk. And we'll have the Mardukan navy coming out of hyperspace on Tanith...So we go to Marduk and smash him now, while he's still little enough to smash."⁵⁷⁸

In CC, Sam Murchison's machinations fail. Neither the Cybernarchists, the Armageddonists nor the Human Supremacy League take power. Nevertheless, the fascist goal of the Cybernarchists seems to be achieved. Under the administration of President Fawzi, Merlin's predictions will be acted upon, and his guidance consistently followed; meaning that the Cosmic Computer will effectively become the planetary government! Something similar happens in *Space Viking*. The fascist People's Watchmen do take power, becoming the planetary government of Marduk, and Zaspas Makann briefly sits on the Throne. But in a twist from CC, it doesn't last. The Mardukan fascists and their Space Viking backers are soon booted out by an allied fleet, led by Prince Trask of Tanith and Prince Simon Bentrík of Marduk.

Thus, there is a 'secondary' external threat, which in both cases solves the Merlin Crisis. In CC, this is the ultimatum from Koshchei, which threatens to annihilate Poictesme unless the internal threat (sectarian violence) subsides, which in turn involves neutralizing the primary external threat (the Terran Federation, represented by Sam Murchison and Generals Foxx Travis and Mike Shanlee). In SV, the secondary threat is the allied fleet, which defeats and destroys the internal threat, Makann and the Mardukan fascists; as well as the primary external threat, the Space Vikings led by Dunnan.

In *Space Viking*, we therefore have what appears to be another Merlin Crisis, because the internal and external threats come to a head almost simultaneously. Makann and his Mardukan fascists take control of their home world, and then the Sword-Worlder Dunnan comes in and takes control from Makann. In addition, the threat both men pose is against Merlin itself, which is secretly located on Gilgamesh. Making the Makann-Dunnan axis, rather than Trask's allied fleet, the more proper 'second external threat', since one of their targets is Gilgamesh, Piper's psychohistoric nucleus, or 'Second Foundation'.

In CC, Merlin was threatened with destruction in several ways, and from several directions. A vest-pocket thermonuclear by General Shanlee (external threat to be detonated internally), annihilation from Koshchei with super-missiles (external threat), and having its circuits burned out by Conn Maxwell and the Fawzi's Office Gang (internal threat). (See Figure 22, above.)

In SV, the threat to Merlin is subtle and indirect, but present. The fascist Zasparr Makann "wanted to run out the Gilgameshers. Everybody was in favor of that." And he rails against "the Gilgamesh Interstellar Conspiracy", also phrased as "the grasping conspiracy of the interstellar bankers! The dirty Gilgameshers!" These are obvious parallels of Hitler's diatribes against the Jews and their alleged International Jewish Conspiracy.⁵⁷⁹ With all the World War II parallels found throughout *Space Viking*, the implication is that the Mardukan Space Navy, under Makann or Dunnan, will target not just Tanith, but Gilgamesh. They will attempt to carry out a future Final Solution, a 'nuclear Holocaust'.

Although Piper's Jews have defeated Space Vikings who attempted to raid their planet in the past, can they stand against an onslaught of fleets from a fully civilized planet like Marduk? Perhaps not, and the destruction of Gilgamesh could include planetbusters and hellburners raining down on the 'holy mountain' of their god, Yah the Almighty. That would mean the destruction of Merlin, who is Yah. Even if the Cosmic Computer survives the bombardment, such an act of planetary devastation would certainly derail the revised Merlin Plan, requiring Yah/Merlin to relocate to yet another world, there to try and compute a third iteration of the Plan. In *Space Viking*, the future history of the entire Galaxy is therefore at stake.

Piper's Foundations and the second Merlin Crisis

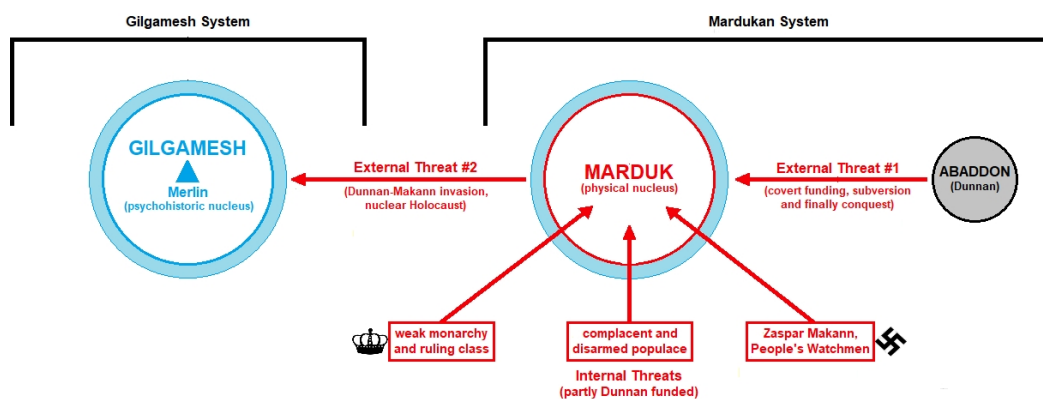


Figure 23. Second 'Merlin Crisis', with Marduk and Gilgamesh (Piper's new 'Foundations') threatened internally and externally.

Notice how in both crises, one of the external threats comes from a barren planet within the foundation-world's own system. Poictesme is threatened with destruction by airless Koshchei, and Marduk is threatened with invasion by airless Abaddon.⁵⁸⁰ Also, the *other* external threat involves a planet in another system entirely. Terra (and airless Luna) in CC, Tanith (and/or Gilgamesh) in SV.

This scenario can explain why Yah/Merlin's followers, the Gilgameshers, covertly aid the Mardukans against Zaspas Makann and Andray Dunnan. During the rise of Makann, the Gilgameshers on Marduk "are cooperative with Naval Intelligence"; and when the allied fleet gathers at Tanith to liberate Marduk, they allow one of their freighters to be chartered for use as a troopship. If they are such a pacifistic people, why are the Gilgameshers involved in this war, even in a nonviolent, support role? Because they "kept these [religious objections to violence] within sensible limits, and were able and willing to fight with fanatical ferocity in defense of their home planet." By aiding Tanith and the Loyalist Mardukans against the Dunnan-Makanns, the Gilgameshers are protecting the Merlin Plan, their planet and their god.⁵⁸¹

In CC, the successful conclusion of the first Merlin Crisis enables Poictesme to begin the Merlin Plan, which is supposed to create a new Federation in a thousand years. And in SV, the successful conclusion of the second Merlin Crisis enables Marduk to begin creating the next Universal State, which will now be known as a 'Galactic Empire', just like in Asimov. But since we are already 800 years into the original Merlin Plan, the revised Plan, at this point, will only take another two centuries to accomplish.

So *The Cosmic Computer* contains the first Merlin Crisis, and *Space Viking* (written close in time to CC) seems to contain the second Merlin Crisis. This is supported by another parallel that occurs at the end of *Space Viking*. The climactic battle on Marduk successfully concludes the second Merlin Crisis, and its aftermath parallels the aftermath of the second Seldon Crisis.

In Piper, the aftermath includes the creation of the League of Civilized Worlds. "And there would be the treaty—Tanith, Marduk, Beowulf, Amaterasu; eventually, treaties with the other civilized planets."⁵⁸²

It is interesting that this treaty involves precisely *four* planets. And that's because after the second Seldon Crisis is successfully concluded, Terminus signs treaties with each of the Four Kingdoms, cementing the Foundation's hold on its neighbors; Anacreon, Smyrno, Konom and Daribow.⁵⁸³ (Figure 24.) This Terminus-led organization becomes the core of the nascent Second Galactic Empire; and in Piper, the Tanith-organized League becomes the core of the nascent Second Universal State, which will be known as the *First* Galactic Empire. (Figure 25.)

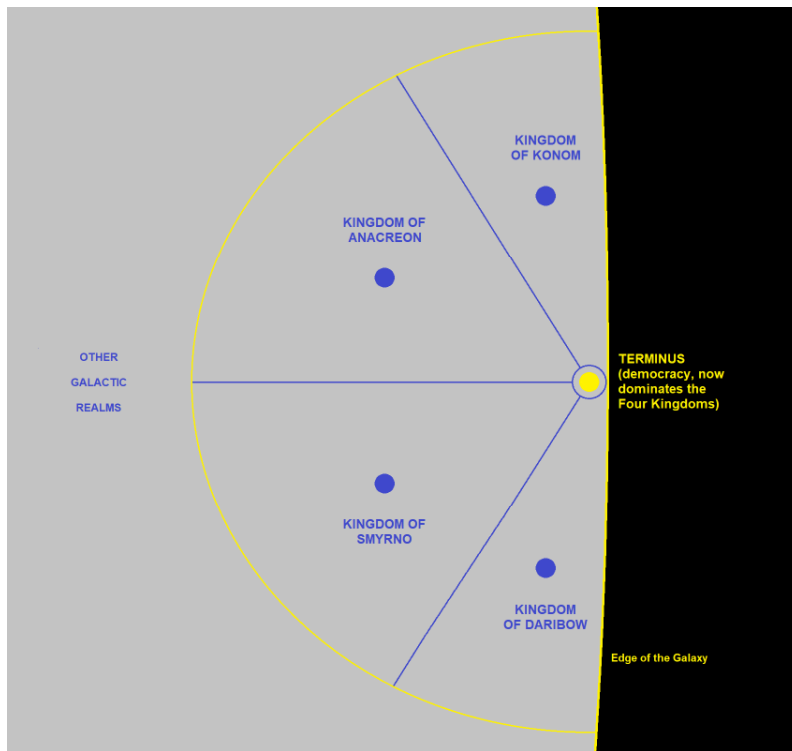


Figure 24. Result of the second Seldon Crisis; Terminus achieves dominance over the Four Kingdoms, via four treaties.

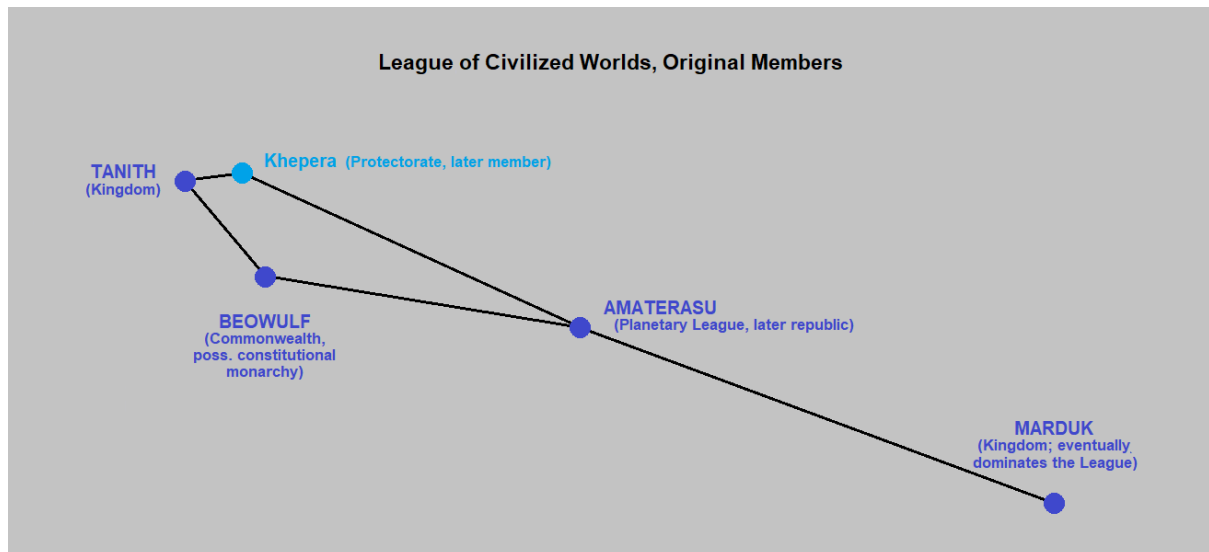


Figure 25. Result of the second 'Merlin Crisis'; establishment of the League of Civilized Worlds, via the 'Four Worlds Treaty'.

Terminus (the First Foundation) now dominates the Four Kingdoms, and we know that Marduk (Beam's new physical nucleus, or 'first foundation') comes to dominate the League. For although "Lucas Trask organizes [the] League of Civilized Worlds", which at first glance would seem to make Tanith the parallel of Terminus, this "work [is] continued by the Bentriks, reigning house of Marduk." Moreover, "By the time of the Nineteenth Century [AE], the League has turned into the Galactic Empire", and the "House of Bentrík [is] firmly established" as its rulers "by [the] end of the First Century" Imperial.⁵⁸⁴

As one of Piper's self-reliant men, Trask therefore wins the battle but loses the war. He saves civilization on Marduk, but Marduk ends up dominating the organization Trask creates.

One difference is that in Asimov, Terminus plus the Four Kingdoms actually equals *five* realms; while in Piper, the original League only has four members. If the parallel holds true, there should be a fifth member somewhere. And we notice that long before the League is constituted, Tanith makes peace with two of the planets it formerly raided; Amaterasu and Beowulf, and begins trading with them. "It would be some years before either planet had hyperships of their own. In the meantime, both were good customers, and rapidly becoming good friends. A number of young Amaterasians and Beowulfers had come to Tanith to study various technologies." This cooperation continues and strengthens over the following years, until it is formalized on the third planet Trask originally raided. "And there was the Treaty of Khepera, between the Princely State of Tanith, the Commonwealth of Beowulf and the Planetary League of Amaterasu. The Kheperans agreed to allow bases on their planet, to furnish workers, and to send students to school on all three planets. Tanith, Beowulf and Amaterasu obligated themselves to joint defense of Khepera, to free trade among themselves, and to render one another armed assistance. That was a milestone of progress, and no argument about it."⁵⁸⁵

So Khepera is the likely fifth member. The Treaty of Khepera is the precursor to the treaty which establishes the League of Civilized Worlds, and as a joint protectorate of Tanith, Beowulf and Amaterasu, Khepera probably also comes under the protection of Marduk when the League is formed. Before the Treaty of Khepera, Amaterasian and Beowulfer students studied on Tanith, with the result that their worlds acquired hyperdrive and became fully civilized again; so the sending of Kheperan students to all three planets (and later, Marduk) should eventually do the same for that world. Khepera will then be another fully-civilized world, entering the League as a member in its own right. (See Figure 25, above.)

In Asimov, the Four Kingdoms are all feudal monarchies, while Terminus, with its elected Mayors, has a democratic form of government. In Piper, the League of Civilized Worlds initially contains at least two kingdoms; Tanith is a feudal monarchy and Marduk a constitutional one. And paralleling Terminus, the Planetary League of Amaterasu has "a republican government."⁵⁸⁶

This leaves Beowulf and Khepera. The Foundation parallel suggests that they should be monarchies. As a Commonwealth, one might assume that Beowulf's political system is democratic. And it may be. However, we recall that "Beowulf" is actually an Old English poem, deriving from the feudal Anglo-Saxon period before the Norman Conquest.⁵⁸⁷ And when Beam wrote *Space Viking*, England was well into the process of converting its former Empire into a Commonwealth; the "Commonwealth of Nations". Thus, the global British Commonwealth may be the model for the interplanetary 'Beowulf (Anglo-Saxon) Commonwealth'. A former empire (on which Beowulf's sun never set), whose monarchs have gradually allowed more democracy, and more autonomy among its member nations and interplanetary colonies.

If so, this would mean that Beowulf is a constitutional monarchy, similar to Marduk. And its deduced political shift from monarchy toward democracy would mirror that of Marduk, which Piper undoubtedly modeled on the political history of Great Britain. Moreover, since republican Amaterasu is the weakest and least advanced member, the League of Civilized Worlds could also initially be called the Three Kingdoms; Marduk, Tanith and Beowulf.

What about Khepera? When raided by Tanith, "the locals hadn't had anything to fight with. Small-arms, and light cannon...He could still see that silly little field gun, it must have been around seventy or eighty millimeter, on a high-wheeled carriage, drawn by six shaggy, bandy-legged beasts."⁵⁸⁸ From the description, Khepera's level of technology is equivalent to the period from the Sixteenth to late Nineteenth Centuries on Terra.⁵⁸⁹ And in those centuries, Terra's most powerful states—England, France, Austria, Russia and Prussia/Germany—were almost entirely monarchies.

Furthermore, as Khepera proceeds toward becoming a fully-civilized world, it will probably look to its League partners for models on how to govern itself. The likely result is that Khepera will adopt a monarchical form of government, probably constitutional. If so, that would complete the parallel with Asimov. Democratic Terminus and the Four Kingdoms, each kingdom of which contains many stellar systems; republican Amaterasu and the four planetary kingdoms, at least two of which (Marduk and Tanith) have their own groups of trade-planets in various systems.

Of course, Beam would not (and does not) parallel Isaac exactly; but his vagueness about Beowulf and Khepera may have been his usual way of muddying the waters, in order to obscure his literary model.

There seems to be another parallel between the two authors' republics, Terminus and Amaterasu. Terminus does not remain strictly democratic; its system evolves over time. In the era of the Combines, the Mayor becomes a figurehead for a corporate oligarchy; and under the Indburs, the office of Mayor becomes hereditary.⁵⁹⁰ Similarly, Piper has Amaterasu's republican government change over time. In "Ministry of Disturbance", Prince Travann calls it "a junk heap. When anything goes badly, they always build something new into the government, but they never abolish anything. They have a president, a premier, and an executive cabinet, and a tricameral legislature, and two complete and distinct judiciaries. The premier is always the presidential candidate getting the next highest number of votes. In the present instance, the president, who controls the planetary militia, is accusing the premier, who controls the police, of fraud in the election of the middle house of the legislature. Each is supported by the judiciary he controls. Practically every citizen belongs either to the militia or the police auxiliaries."⁵⁹¹

To me, this setup sounds rather schizophrenic. (See Figure 26, below.) What Piper appears to have given Amaterasu are two governments on one planet. Paralleling the First and Second Foundations, perhaps, which at the end of the series were both allegedly located on democratic Terminus?

b) Space Viking—"The Period of Coalescence"?

Now let's take a look at that anomalous 'delay' in Marduk's rise to Empire. For if the Merlin Plan was rescued by Marduk's deduced victory in the Seven Worlds War, circa AE 1315, Marduk should have immediately begun its expansion toward becoming a Galactic Empire, paralleling the renewed expansion of Terminus after the Seldon Plan is rescued. Why doesn't this happen; why does it take another 400 years, during which the Mardukan monarchy declines to near impotence, and its people become lazy and directionless, before the trend is reversed and its path to Galactic dominance begins? Simply because Piper wanted to differentiate his Future History from Asimov's, or is there more to it?

Although at the end of *Second Foundation*, the Seldon Plan is completely back on track, and "the huge Galaxy...was now safe forever",⁵⁹² this does not mean there will be no more Seldon Crises. In fact, in

AMATERASU'S POLITICAL SYSTEM

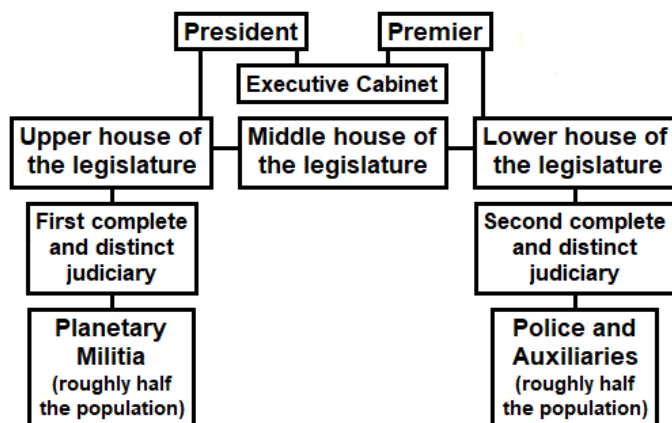


Figure 26. Amaterasu's political system, as described in "Ministry of Disturbance". One planet, two governments. ⁵⁹³

that same book two characters discuss one which will occur four centuries in the future. Unfortunately, Asimov never reached that point in the Interregnum, because by the time he finished *Second Foundation* he "had grown tired of the series, dropped it, and moved on to other things." ⁵⁹⁴ But the timing of this future Crisis seems to roughly coincide with Piper's four century 'delay' in the rise of Marduk.

Four centuries after AE 1315 is AE 1715, the time of *Space Viking*. And the future Crisis mentioned in *Second Foundation* is described by First Speaker Preem Palver. The current date is early November, 376 FE. Palver is showing one of his students his contribution to the Seldon Plan, which all Speakers must make. " "This," he said, "is mine." A fine red line encircled two forking arrows and included six square feet of deductions along each path. Between the two were a series of equations in red. "It does not," said the Speaker, "seem to be much. It is at a point in the Plan which we will not reach yet for a time as long as that which has already passed. It is at the period of coalescence, when the Second Empire that is to be is in the grip of rival personalities who will threaten to pull it apart if the fight is too even, or clamp it into rigidity, if the fight is too uneven. Both possibilities are considered here, followed, and the method of avoiding either indicated." ⁵⁹⁵

To my knowledge, Asimov never clarified this cryptic comment. The "time which has already passed" in the Plan is 376 years, meaning the event alluded to will occur around 752 FE. This is four centuries in the future; the middle of the Eighth Century of the Foundation Era, compared to the current year in the later part of the Fourth Century.

The timing is similar to Piper's, particularly when we remember that the date of the 'Seven Worlds War' is an approximation. It could take place in AE 1315, exactly four centuries before the concurrent point in *Space Viking*; but a strict interpretation of Merlin's prediction (the nucleus-world will appear "five or so centuries" after AE 854) would put it at or near AE 1354. This is 350 years before *Space Viking* begins, and roughly 360 before the creation of the League of Civilized Worlds. Neither number is very far from the 376 years between *Second Foundation* and "the period of coalescence" mentioned by Palver.

This begs the question—did Beam intend for *Space Viking* to parallel "the period of coalescence" that Asimov never got around to writing about?

One of the three major locations in his novel—and the scene of the climactic battle—is the planet Marduk. Marduk is later said to be "where the [Galactic] Empire had begun." ⁵⁹⁶ Applying Asimov's words, Marduk in *Space Viking* is therefore "the Empire that is to be", and it is very interesting that just at this moment, it is "in the grip of rival personalities who...threaten to pull it apart if the fight is too even, or clamp it into rigidity, if the fight is too uneven."

c) “When The Empire That Is To Be Is In The Grip Of Rival Personalities”

The rival Mardukan personalities are Zasparr Makann and Simon Bentrík. But in another case of ‘doubling’, Piper doubles this by adding a second pair of rival characters. For these two Mardukan adversaries are backed by two adversarial Sword-Worlders; the Gram-born Space Vikings, Andray Dunnán and Lucas Trask.

Now, by looking at the Mardukan situation in an Asimovian context, we can see that

1. If the fight between Makann and Bentrík is too even, Marduk will be pulled apart.

This process begins after an election on Marduk. As related to Prince Trask by Simon Bentrík’s wife Princess Lucille, Makann “didn’t really win the election, but he might as well have. Nobody has a majority of seats in the Chamber of Representatives but he’s formed a coalition with several of the splinter parties, and I’m ashamed to say that a number of Crown Loyalist members—Crowd of Disloyalists, I call them—are voting with him, now...With the splinter-party and Disloyalist support, they got a majority of seats in the Delegates...a hundred out of a hundred and twenty are his supporters. Makann, of course, is Chancellor.” “As soon as the new government was formed, [Makann’s People’s Welfare Party brought out their weapons and] were given status as a part of the Planetary Armed Forces. They have taken over every police station on the planet.”⁵⁹⁷

Even though “The election had been a farce of bribery and intimidation”, the only major member of the Royal Family who refuses to submit to the result is Prince Simon Bentrík. King Mikhyll is old; he merely “shrugs and says, ‘I just reign here.’ ” His son, Crown Prince Edvard, actually joins the government as Prime Minister, naively believing “that the election was an expression of the will of the people, and that it is his duty to bow to it.” But as for Simon, “He’s going to fight. Maybe as a guerilla in the mountains, I don’t know. But even if he can’t lick them, he won’t join them.”⁵⁹⁸

So it’s Zasparr Makann versus Simon Bentrík, maniacal Fascist versus unyielding Royalist.

For opposing the government, “Charges of high treason” are brought against Prince Bentrík, and he goes underground. The Crown Prince is assassinated, allegedly by a Gilgamesher, and Makann uses it as a pretext to seize the Royal Palace and the King, “and immediately there had been massacres by People’s Watchmen everywhere.” This includes the Mardukan Planetary Army, which is charged with plotting “against the King and the government. Scattered over the planet in small garrisons, the army had been wiped out in two nights and a day. Now Makann was recruiting it up again, exclusively from the People’s Welfare Party.”⁵⁹⁹

The Fascists now control Marduk.

Meanwhile, Prince Bentrík clandestinely organizes “a mutineering conspiracy in the Royal Mardukan Navy.” He is smuggled to the Moonbase, and “The day the Crown Prince was murdered, we had a mutiny of our own. We killed everybody we even suspected of being a Makkannist. The Moonbase has been under attack from the planet ever since.”⁶⁰⁰

Since satellites are considered to be politically part of the parent planet (see section **Both Recordings Made at the Capital Planet**), Marduk is essentially being pulled in two. So is its space navy. “[S]ix ships of the former Royal Navy...had gone over to Makann”, while on Gimli, “four ships” which remain loyal are waiting when the allied fleet arrives from Tanith, and the Mardukan Admiral Bargham is left to wait for any others that may rally there.⁶⁰¹

The Moonbase can undoubtedly hold out for a long time. “It’s a strong base. It was built four hundred years ago, when Marduk was fighting a combination of six other planets. It held out against continuous attack, once, for almost a year. It’s been constantly strengthened ever since.”⁶⁰²

Thus, if this situation does not change soon, we can expect the division of Marduk into two rival states; a ‘Planetary Nationalist Republic of Marduk’, headquartered in Malverton, and the remnant Kingdom of Marduk, headquartered on its Moon.

“Pulled apart” also has the connotation of being destroyed; i.e., torn into pieces. If the war between Marduk and its Moon continues for a long period of time, it will probably end with the nuclear destruction of both. This process has also started. Makann’s protégé Andray Dunnán has already terror-bombed “more than half” of Marduk’s trade-planets. Among the remainder, Gimli is still loyal to the Throne, but that probably makes it the next target of the Dunnán-Makanns. Meanwhile, the Royalists on the Moonbase “blew out the Malverton Navy Yard. They’re still using the Antarctic Naval Base, but we’ve knocked out a good deal of that.”

In addition, “The rest of Dunnan’s fleet, five ships...made a landing on Malverton while it was turned away from us.”⁶⁰³ Thus, Malverton itself, once the royal capital and now infested with Mardukan fascists and Space Vikings, will eventually be targeted by the Moonbase. This is suggested by Prince Bentrík, who tells Prince Trask on Tanith, “If I don’t return in fifteen hundred hours from the time I left Moonbase, they’re to use their own judgment. I’d expect that they’d move in on Marduk and attack.”⁶⁰⁴

2. If the fight between Makann and Bentrík is too uneven, Marduk will be clamped into rigidity.

This suggests a quick victory by either Makann or Bentrík. In Makann’s case, a quick victory would prevent the Moonbase from breaking away or even holding out. Probably by stopping Prince Bentrík before he can organize his conspiracy in the Royal Navy. When Simon disappears, no one is sure what has become of him. “Gone underground, or *secretly arrested and executed*; take your choice.” And even if he is not secretly arrested and executed at this point, Simon could be captured and killed later, before he makes it to the Moonbase. That’s what happens to someone who helps him get there. “I...turned into a civilian contragravity-lifter operator at the Malverton Navy Yard. Finally, when I was suspected, one of the officers—he was *arrested and tortured to death later*—managed to smuggle me onto a lighter for the Moonbase.” If his hair-breadth escapes had not been successful, Prince Bentrík would have been captured and killed while still on Marduk. The result of this quick Makann victory over Prince Bentrík would probably have clamped Marduk into the rigidity of a neo-fascist planetary police state.⁶⁰⁵

It’s even worse, because the fact that Makann was studying Hitler⁶⁰⁶ also suggests that his ambitions will just continue to grow. After assuming control of Marduk, he will quickly build up the planet’s strength, and attempt to create a ‘Greater Marduk’ and a Galactic Empire based on it, just as Hitler attempted to create a Greater Germany in his quest to dominate the world. Hitler remilitarized Germany with amazing speed, and this was accompanied by similarly-stunning advances in weaponry, and their strategic and tactical use—the blitzkrieg. Marduk is a fully civilized planet with two billion people, suggesting that, under an authoritarian government, it has the manpower and industrial might to create a huge Planetary Army and Space Navy in a relatively short amount of time. Coupled with advances in weapons, strategy and tactics, this could likewise turn fascist Marduk into the most powerful state in the Old Federation, and enable it to expand with surprising speed.

And one of its targets would be Tanith. Because Trask says that “as soon as Makann consolidates his position he’s sending an expedition against Tanith.” Even before Zaspár Makann took power on Marduk, Prince Trask rescued Prince Bentrík on Audhumla, and in the process destroyed two ships of Makann’s ally, Andray Dunnán; the *Yo-Yo* and the *Enterprise*. “Admiral Dunnán” later joins Makann’s fascist forces on Marduk, and just like Zaspár, Andray studied Hitler. So that even after Dunnán takes over, Mardukan aggression will still target Tanith. Baron Valkanhayn says “And then he’ll own Marduk. And we’ll have the Mardukan Navy coming out of hyperspace on Tanith.”⁶⁰⁷

A quick Makann victory would therefore preempt the rescuing fleet sent by Tanith in the book; Prince Trask would be put on the defensive. Even with his planetary allies like Beowulf and Amaterasu, Trask will probably not be able to withstand the Dunnán-Makann blitz that would follow—especially if fascist Marduk allies with Trask’s other enemy, Prince Viktor of Xochitl, an attack from whom Trask is already expecting. And although the best defense is a good offense, we recall that Marduk’s Moonbase once held out against the combined navies of six planets for over a year. And it’s much stronger now. In Makann or Dunnán’s hands, this would make the Moonbase an almost-impregnable defense against any attack on Marduk, paralleling the Atlantic Wall of Hitler.

Now let’s bring in Asimov again. The Seldon Plan deals only in probabilities, so the Second Galactic Empire could take several forms. When discussing the Period of Coalescence, First Speaker Preem Palver asks his student, “Do you think that *any* Second Empire, even if formed in the time set by Seldon, would do as a fulfillment of his Plan?” The student replies, “No, Speaker, I do not. There are several possible Second Empires that may be formed in the period of time stretching from nine hundred to seventeen hundred years after the inception of the Plan, but only one of these is *the* Second Empire.”⁶⁰⁸

In Piper, the result of a Nazi-style, Greater Mardukan Galactic Empire, will therefore not be *the* Galactic Empire, the universal state that the Merlin Plan seeks to create. It can’t be, obviously, since the Gilgameshers are working behind the scenes against Makann’s fascists and Dunnán’s Space Vikings, and in support of Prince Bentrík and the Mardukan Royalists.

Now let's look at it from the other side. What would be the result of a quick Bentrík victory? One would assume that this entails Prince Bentrík being able to "move in on Marduk and attack" from the Moonbase, and liberate the planet himself, without traveling to Tanith as a "beggar" to seek help from Prince Trask and his allies. Perhaps—and this is important—not even requiring help from the Mardukan people in destroying the fascist regime.

If Bentrík needs no help from Tanith, Beowulf and Amaterasu, there would seem to be no need for a League of Civilized Worlds, or at least no need for Marduk to join such an organization. Nothing to get Marduk working together with other planets for the advancement of Terro-Human civilization as a whole. And if Bentrík doesn't even need help from the Mardukan people, there may well be a return to the *status quo ante*, in which the populace simply resumes its complacent path. Their planet would then continue its slow and inexorable decivilizing.⁶⁰⁹

Thus, in a quick Bentrík victory, Marduk "will be clamped into rigidity", too. But this will either be the rigidity of a monarchy having to direct the lives of its lazy and unmotivated citizens (eventually ending in failure to keep their civilization alive); or, if Simon Bentrík is able to effectively utilize Marduk's manpower, a narrow, planetary Royalism, without regard for the greater galaxy. Merely the advancement of Marduk's interests against all others. And if a strictly Royalist Mardukan Galactic Empire results, it too will likely not be *the* Empire the Merlin Plan seeks to create.

3. However, both outcomes are avoided.

The fight between Makann and Bentrík is not too even; it seems to last less than a year.⁶¹⁰ Thus, Marduk and its trade-planets are not permanently split between two mutually, implacably hostile governments, which would probably end up destroying each other.

The fight is also not too uneven; a quick victory is not gained by either Makann or Bentrík. Zasparr Makann is prevented from clamping Marduk into neo-Nazi rigidity, and Simon Bentrík is prevented from liberating Marduk without help from other planets, as well as from his own people. Moreover, the planet does not suffer too much relative destruction as Bentrík and his allies liberate it. Only Drepplin, a "big industrial center", seems to suffer serious damage. "The people there had risen in support of the Makann regime, and [Captain Gompertz of the Grendelsbane] wanted authorization to use nuclear weapons against them." Prince Trask persuades Prince Bentrík to allow the three independent Space Vikings to loot the city instead. Bentrík reluctantly agrees. "It's not what we'd like to do, it's what we have to do. By all means, gentlemen. Take your men to Drepplin, and nobody will object to anything you do."⁶¹¹

In fact, the fight between Makann and Bentrík seems to last 'just long enough'. Not so long as to split and destroy Marduk, and not so short that the Mardukans are either completely Nazified, or can just go back to their complacent existence before the war. It is, apparently, just long enough to wake them up from their easy yet aimless lives. Perhaps now, the Mardukan people and their rulers realize that Prince Trask was right, and echo his words, saying, "We have a wonderful civilization here on Marduk; we can make almost anything of it."

The slow decivilizing of Marduk that had been occurring before the war is halted, and indeed reversed. Its weak and fading democracy is replaced by a strengthened monarchy under King Simon I.⁶¹² Thus, the war between the two rival personalities of "the Empire that is to be" seems to end with the best result possible. To bring in Asimov one more time, for Marduk, "the path has been marked out, and at its end is new and greater Empire!"⁶¹³

Assuming all these deductions are correct, let's now compare Piper's events with Asimov's.

AE 1354 The 'Seven Worlds War'; Marduk defeats a coalition of 6 other planets. The Merlin Plan is rescued, or the revised or 'new' Merlin Plan begins. Marduk becomes the new nucleus world of the nascent Second Universal State, which will be known as the First Galactic Empire.

About 360 years later,

FE 376 The Kalganian War; Union of Worlds attacks the Foundation and is defeated. The Second Foundation is then 'discovered' on Terminus and 'destroyed'. The Seldon Plan is thereby rescued, with great sacrifice and drastically revised equations. Terminus then resumes its march toward establishing the Second Galactic Empire.

About 376 years later,

AE 1715 The Battle of Marduk; Marduk is in the grip of dual pairs of rival personalities, one from Marduk and one from Gram. These are Prince Bentrík of Marduk, who is supported by Prince Trask from Gram; and Bentrík's enemy Zaspár Makann, Mardukan fascist, who is supported by Trask's enemy, the Gram-born Andray Dunnán. In less than a year, the Dunnán-Makanns are defeated, and with its monarchy reinvigorated, Marduk will begin its march toward founding the 'correct' Galactic Empire, as presumably calculated in the new or revised Merlin Plan.

FE 752 The Period of Coalescence; "when the Second Empire that is to be is in the grip of rival personalities who will threaten to pull it apart if the fight is too even, or clamp it into rigidity, if the fight is too uneven. Both possibilities are considered here, followed, and the method of avoiding either indicated." Since the Second Galactic Empire is indeed founded circa FE 1000, we can assume that the Period of Coalescence is successfully navigated, and that Terminus goes on to establish the 'correct' Second Empire.

AE 1715 The Battle of Marduk may therefore be the second 'Merlin Crisis', since a Dunnán-Makann victory would likely have resulted in the destruction of Gilgamesh, including Merlin and its programmers, who are Piper's 'Second Foundation'. This may be the last 'Merlin Crisis' before the establishment of the Galactic Empire.

FE 752 The Period of Coalescence is almost certainly another Seldon Crisis, and presumably one of the last, if not the last, before the Second Galactic Empire is established circa FE 1000.

AE 1715 After the second 'Merlin Crisis', a treaty establishes the League of Civilized Worlds. Its founders include the Kingdoms of Tanith and Marduk, the Commonwealth of Beowulf (possibly a converted monarchy) and Amaterasu's Planetary League (later a republic). Khepera is a protectorate of the LCW, until it becomes civilized enough to be admitted as a member in its own right. The League's further expansion probably includes worlds like Indra (currently a trade-planet of Tanith) and Ithavoll (former colony of Marduk). Before long, however, the League comes to be dominated by Marduk, which eventually converts it into an empire, the (First) Galactic Empire.⁶¹⁴

FE 80 Following the second Seldon Crisis, Terminus signs treaties with the Four Kingdoms, effectively placing them under Foundation control. The Four Kingdoms are all feudal monarchies, while Terminus has a republican form of government. This is the first phase of the Foundation's expansion, followed by the acquisition of other worlds; such as Korell, Askone and Siwenna; as Terminus steadily increases its economic and political dominance. Eventually, this dominance is converted into an empire; the Second Galactic Empire.

As usual, the parallels are not exact. But if *Space Viking* parallels "the period of coalescence" not reached by Asimov, then one of its major factors will be the amalgamation of various trade groupings into a unified network. Marduk currently has its own group of trade-planets, as do the other civilized worlds; and Tanith creates one of its own, later joining it to Marduk's within the League. There is also the subtle and unofficial Gilgamesh network, which extends throughout the Old Federation. As these links continue to grow, they will foster economic integration, which will eventually result in political unification.

d) A Later Coalescence?

As we've seen, the period of coalescence in Asimov refers to a time when the Foundation controls a much larger part of the Galaxy than it does in 376 FE. It is therefore possible that the corresponding event in Piper actually occurs a century or two after *Space Viking*, when the Mardukan Empire has absorbed a great deal of the Old Federation. As stated in **Appendix 1, Parallel Historical Models**, both Asimov and Piper were modeling the post-Roman Empire period for their medieval-like Interregnums. The Mayors of Terminus, and the 'Mayor' (Fawzi, later President) of Poictesme, parallel the Mayors of the Palace in medieval France; and the shift of the nucleus-civilization from Poictesme to Marduk parallels the shift of the Holy Roman Empire from its original home in France to its new base in Germany.

Beam's First Galactic Empire may therefore be modeled on a reunification of the fragmented Roman Empire (as Asimov's Second Galactic Empire seems to be), which in the main would entail reunifying the Western (Holy) Roman Empire and Eastern Roman (Byzantine) Empire. The Holy Roman Empire is paralleled by Marduk, and since the Galactic capital is eventually transferred from Marduk to Odin, we can deduce that Odin and its trade-planets constitute an 'Odinic Empire', which parallels the Byzantine Empire.

Thus, the shifting of the capital from Marduk to Odin parallels the early-medieval movement of the Roman capital from the West (Rome) to the East (Constantinople). Moreover, if the Holy Roman Empire had ever united with the Byzantine Empire, the capital would most likely have been Constantinople, a city far greater in size and majesty than any existing in the West at that time. Rome had been sacked twice and reduced to ruins; its once-sizable population killed or scattered. All that existed in the West were towns of comparatively tiny size. Constantinople, on the other hand, was the greatest city of medieval times, and the center of the Mediterranean World after the fall of Rome. Its future parallel, Odin, is therefore the new center of the Terro-Human worlds; the greatest planet of this medieval-parallel period.

Odin as a parallel of Byzantium or Constantinople is supported by the Thoran guard of the Galactic Emperors, which have their parallel in the Varangian Guard of the Byzantine Emperors. The Varangians were eastern Vikings, whose main god was Odin, and whose war god was of course Thor. The Thoran bodyguards in Piper are therefore warriors who 'serve Odin'; Odin not only being the capital planet of the Galactic Empire, but the Emperor himself, who personifies the planet and the Empire.

So in the possible case of a "later coalescence", this could involve the unification of the Mardukan and Odinic Empires into the Galactic Empire. And political union could be fostered by a dynastic merger. The Galactic Emperors alternate between the names Rodrik and Paul. Rodrik is a 'Germanic' looking name, similar to Bentrík, the house which reinvigorates the Mardukan monarchy, and creates the Mardukan Empire, which parallels the Holy Roman Empire. The name Paul could therefore come from the royal house of Odin, the Byzantine parallel. Paul is an 'eastern' name, derived from the Hebrew Saul, and most noted for Paul the Apostle, who did much to convert the people of Asia Minor to Christianity.

There are a couple of facts mitigating against this 'later coalescence' scenario, however. First, Piper seems to have modeled the Imperial Galactic line on the Danish monarchy, whose kings have alternated between the names of Frederik (parallels Rodrik) and Christian (parallels Paul, a Christian name) for almost 500 years. Denmark was never part of the Holy Roman Empire, but was a neighboring kingdom, as well as being Germanic in ethnicity and culture. So both the Rodriks and Pauls of the Galactic Empire may be Mardukan names in origin.

Second, in "The Future History" Beam says that the League of Civilized Worlds "turned into" the Galactic Empire, under the rule of the house of Bentrík. There is no hint of a dynastic merger with another major civilized world and its empire. Though to be fair, Piper's document is an overview of many centuries of future history, so a number of details have undoubtedly been glossed over or fallen out.

Overall, it seems safe to say that the 'later coalescence' idea is much less likely than the main one, namely that *Space Viking* is (or at least begins) the Period of Coalescence.

Appendix 10. Parallel Salvaged Hyperships

For this topic, my thanks go to Nils Jeppe, who brought this parallel to my attention. In a November 2022 email, he wrote, "The Foundation restores an old Imperial battle cruiser at some point, and CC is of course all about salvaging tech."

That's one I completely missed, and a bit of research reveals some very interesting details about that battle cruiser, which has a parallel ship in Piper.

1. In Asimov, an Anacreonian merchant vessel discovers an old Imperial battle cruiser, a derelict which has been drifting through space for at least three centuries.⁶¹⁵

In Piper, the Poictesmeans similarly cross space in a (converted) merchant ship to Koshchei, where they discover an old Federation hypership, unfinished and therefore left 'derelict' for four decades.⁶¹⁶

Differences. First, Asimov's ship is found drifting in airless space, but Piper's is found on a planet. However, the planet Koshchei is airless. Second, unlike Asimov's Imperial cruiser, Piper's Federation vessel is not a warship. However, it was built during the System States War, and the shipyard on Koshchei "was a naval base and naval arsenal during the war."⁶¹⁷ Thus, Federation warships were almost certainly constructed there. And third is the span of time the ships have been abandoned. Asimov's "at least three centuries", compared to Piper's four decades.

2. The derelict Imperial cruiser is in great shape. Mayor Hardin of Terminus says that "It's in good condition, I understand." "In entirely too good condition," responded [High Priest Poly] Verisof, dryly."⁶¹⁸

Likewise, the old Federation vessel is in excellent shape. Conn describes it as "an almost completed hypership...She had all her collapsium on, except for a hundred-foot circle at the top and a number of rectangular openings around the sides. Yves Jacquemont said that would be where the airlocks would go." Jacquemont adds that "They have all the engines in—Abbott lift-and-drive, Dillingham hyperdrives, pseudograv, power reactors, converters, everything." For another character, this raises an obvious question. "Wonder why they didn't finish her, if they got that far," Retief said."⁶¹⁹

3. Mayor Hardin tells Verisof that "The Board of Navigation has sent me a petition asking me to obtain the ship for purposes of study."⁶²⁰

Although the Poictesmeans don't need to 'study' the unfinished hypership, Conn sets up a school on Koshchei, so that they can teach themselves how to complete it, and then go on to build their own hyperships. Then he and Charley Gatworth begin studying hyperspatial astrogation, so they can operate the ships (undoubtedly starting with the unfinished one) when they're completed and ready to fly.⁶²¹

4. Asimov's Imperial cruiser is huge. Verisof: "It's a *ship*! They could *build* in those days. Its cubic capacity is half again that of the entire Anacreonian navy."⁶²² Thus, the present generation cannot build ships on the same scale as in the old days.

Piper's old Federation ship is similarly big, being a "Twenty-five-hundred-footer". That's 25% larger than the freighters in *Space Viking*, built 800 years later, which are only 2000 feet in diameter.⁶²³ And some 2000-footers, like Prince Trask's *Nemesis*, are built for raiding as well as trading. That should require an even larger ship, because besides cargo space for booty and trade goods, you need room for soldiers and military equipment. Thus, it seems that after the Federation collapses for good, there is a parallel decline in the size of ships. Later generations cannot build at the scale of their forefathers.

However, this may also be related to the fact that the Sword-Worlds are all low-population planets. They don't need bigger ships, while the higher-population worlds of the Terran Federation did.

5. The Foundation repairs the derelict ship and puts it back into commission, naming it the *Wienis*.⁶²⁴ And the Poictesmeans on Koshchei complete the derelict hypership and put it into commission, naming it the *Ouroboros II*.⁶²⁵

6. The original name of the Imperial battle cruiser is not given by Asimov (whose minimalist style of writing leaves out many details); it is Mayor Hardin who suggests re-naming it the *Wienis* to please the Prince Regent of Anacreon, "as a mark of our esteem and affection."⁶²⁶

Piper actually followed this element by having his derelict ship originally nameless as well. In his case, however, it was because the vessel was left unfinished by Federation workmen at the end of the System States War, and therefore was never officially christened. All it was given was “a shipyard construction number”. However, since they decide to “call her *Ouroboros*, after Genji Gartner’s old ship, the one that discovered the Trisystem”, it can be said that this choice is a ‘mark of their esteem and affection’ for the founding father of their planet.⁶²⁷

Another difference is that the Anacreonian merchant ship which discovers the Imperial derelict is also left unnamed by Asimov. But Piper provides the name of the converted merchant ship which discovers the derelict hypership on Koshchei. This is the *Harriet Barne*.

7. It takes several months to finish repairing the *Wienis*. Hardin says that “We have at least six months to spare [before the Seldon Crisis arrives], so have the ship fixed up and present it [to Anacreon] with my compliments.” When he travels to Anacreon, not quite six months later, the ship is already completed and has been commissioned in the Anacreonian Navy.⁶²⁸

Piper includes a similar timeframe. Before work begins on the hypership, Conn returns to Poictesme, where he tells President Jake Vyckhoven that “We expect to have her [the *Ouroboros II*] to space in a few months.”⁶²⁹

8. Even without the *Wienis*, Anacreon already possesses a Space Navy which can easily defeat the Foundation. Hardin says, “You and I both know that the armament he now has could defeat Terminus handily, long before we could repair the cruiser for our own use.” Indeed, it was the Foundation itself which helped Anacreon build up this power. Prince Wienis says that “you kindly helped us to arm ourselves, aiding us particularly in the development of a navy of our own, a great navy. In fact, a navy which, since the donation of the Imperial cruiser, is quite irresistible.”⁶³⁰

Over to Piper. In addition to finding what becomes the *Ouroboros II*, the Poictesmeans also discover that Koshchei possesses many hundreds of other ships. “They haven’t found a ship, Conn; they’ve found all of them. All the ships in the Alpha System except the *Harriet Barne* and the two they’re building at Storisende...It’s where most of the troops in the system were embarked on hyperships”. The ships on Koshchei number in the “Hundreds, no, over a thousand of them; two- and three- and five-hundred footers, and here and there a thousand-footer that could have been converted into a hypership if anybody had wanted to take the trouble.”⁶³¹

Notice that, if all these ships were in commission, manned and armed (which they likely will be soon after *The Cosmic Computer* ends), Koshchei would have a Space Navy of impressive power. In fact, a great navy; one that the almost ship-less Poictesme would be quite unable to resist.

Moreover, Koshchei possesses hundreds of interplanetary super-missiles, also abandoned by the Federation. Meaning that ‘the armament Macquarte now has could defeat Poictesme handily’, even without any ships in commission. See number 10, below.

9. After being repaired, the *Wienis* is sent from Anacreon (enemy planet) toward Terminus (Foundation planet), with the intent of conquering the Foundation and usurping its position of dominance out on the Periphery of the old Empire.⁶³²

Similarly, after being completed, the *Ouroboros II* is sent from Koshchei to Poictesme, Piper’s ‘foundation’ planet, which appears to be located out at the edge of Federation space.⁶³³ And Koshchei quickly becomes Poictesme’s ‘enemy’; see next point.

10. The *Wienis* “has atomic blasts capable of blowing up a planet”, which means that it could utterly destroy Terminus.⁶³⁴

And soon after the *Ouroboros II* lands on Poictesme, Simon Macquarte over on Koshchei threatens the planet with global annihilation. He is able to do so because, in addition to the hundreds of spaceships abandoned there, Koshchei is also home to hundreds of old Federation weapons that can devastate entire worlds. As Simon says, “Here the Federation Navy built their super-missiles, the missiles which devastated Ashmodai, and Belphegor, and Baphomet, and hundreds of these weapons are here.”⁶³⁵

Thus, Koshchei has “atomic blasts” (nuclear weapons) capable of utterly destroying the surface of Poictesme, though probably not of blowing up the planet.

11. A Seldon Crisis is reached when “the external and internal pressures [on Terminus]...come to a head simultaneously.” Combined, these pressures will keep the Foundation on the right track. Hari Seldon says that “in each case your freedom of action will become similarly circumscribed so that you will be forced along one, and only one, path.”⁶³⁶

In Mayor Hardin’s case, the external ‘pressure’, or threat, is Anacreon. But there is an internal threat to the Foundation as well. This is “A group of councilors” who “are forming a new political party.” Known as the Actionist Party, and led by Sef Sermak, its members advocate more direct action against the Foundation’s enemies. They counsel Mayor Hardin to strengthen Terminus’ defenses, and attack Anacreon before Anacreon attacks them. They are therefore in direct opposition to Hardin’s maxim that “violence is the last refuge of the incompetent.”⁶³⁷

Hardin rejects their counsel, but he knows that their party is “Damned strong. They’ll probably control the Council after next election.” If that happens, they will undoubtedly enact new policies, thereby changing the historical course of the Foundation, and likely derailing the Seldon Plan. And in fact, the Actionists soon consider Mayor Hardin a traitor, first because he fixes up and presents the incredibly powerful *Wienis* to the Anacreonians, but secondly, and most especially, when he announces that he will travel to Anacreon for the coronation of King Lepold. Reading the front-page news, “Sermak said, in a hushed voice, “Great Space, he’s going to Anacreon. *Going to Anacreon!*” “It is treason,” squeaked Tarki, in sudden excitement. “I’ll be damned if Walto isn’t right. He’s sold us out and now he’s going there to collect his wage.” Sermak had risen. “We’ve no choice now. I’m going to ask the Council tomorrow that Hardin be impeached. And if *that* fails—”

When Hardin leaves for Anacreon, it is mentioned that the Actionists might attempt to seize power in his absence, thereby thwarting his secret plan to defeat Anacreon without resorting to violence.⁶³⁸

In Piper, we see a similar convergence of internal and external pressures. The external threat is Koshchei and its super-missiles, but this threat only materializes when the internal pressures have brought Poictesme to the verge of civil war. Beam slowly and methodically builds up the internal crisis, starting with the Planetary Government. “Merlin was now a political issue. A bill had been introduced in Parliament to amend the Abandoned Property Act of 867 and nationalize Merlin, when and if discovered and regardless by whom.” Soon there is “growing sentiment in favor of turning the entire Government over to the computer as soon as it was found.” And this is followed by the formation of several new political parties; the Armageddonists, Cybernarchists and the Human Supremacy League.

The goals of these groups differ, from those who merely want Merlin to advise the Government (the Human Supremacy League), to fascist types who go around sieg-heiling Merlin and want it to *become* the Government (the Cybernarchists), to religious fanatics who want to destroy it, believing that “if Merlin were ever found, Divine vengeance in a spectacular form would fall not only on Poictesme but on the entire Galaxy (the Armageddonists).” Their differences eventually lead to armed conflict, not only between these groups but against the Planetary Government, but the latter is too weak to get the situation under control. “President Vyckhoven proclaimed planet-wide martial law, and then discovered that he had nothing to enforce it with.”⁶³⁹

The internal pressures include Conn’s own family, which begins breaking apart under the strain of events. Flora Maxwell and her fiancé Wade Lucas initially oppose Conn and his father, believing that the search for Merlin is just a scheme to defraud the Poictesmean people of what little money they have left. Then Wade, an MD, is persuaded to join the Maxwell men in salvaging old Federation hospital equipment from “six fully supplied hospitals, intended to take care of the casualties in case of a System States space-attack”, because he knows that “Medical supplies of all sorts are getting hard to find.” But Wade’s about-face infuriates Flora, who breaks off their engagement, and she then begins bickering with her mother; and when Foxx Travis announces via recording that Merlin doesn’t exist and the Maxwell men are perpetrating a fraud, Rodney Maxwell is arrested, and Mrs. Maxwell (who didn’t know what to believe, and who also had cut off contact with her husband and son) has a complete collapse, and is on the verge of death in a hospital.⁶⁴⁰

In addition, we learn that the internal political pressures have been ‘external’ as well, in that at least two of the new political parties causing all this planetary chaos (the Human Supremacy League and the Armageddonists) were funded by none other than Sam Murchison, the Federation Minister-General to Poictesme.⁶⁴¹

The internal crisis is reached when Merlin is about to be opened. Opening Merlin has the potential to cause "the whole Federation breaking up into bloody anarchy". To prevent this, Federation General Mike Shanlee, in his disguise as the preacher Carl Leibert, attempts to vaporize Merlin (along with himself and the entire Fawzi's Office Gang) with a vest-pocket thermonuclear; meanwhile, Travis' statement that Merlin does not exist and that the Maxwells are perpetrating a fraud causes Rodney Maxwell to be arrested and the stock market to start spinning out of control. Wild and contradictory rumors are flying around; that Merlin has been found, that it's been blown up, that it's been transported to Storisende to advise the government, and even that it is destroying the planet. "Rioting had broken out in Storisende and a dozen other places. [Conn] saw, on a news-screen, a mob raging in front of the Executive Palace; yellow-shirted Cybernarchists were battling with city police and Planetary troops, Armageddonists and Human Supremacy Leaguers were fighting both and one another."

It is at this point that the external threat arises. The colonists on Koshchei send a nuclear-backed ultimatum, threatening to destroy Poictesme with super-missiles if their demands are not met.⁶⁴²

Poictesme is in chaos, Koshchei is threatening to nuke it into oblivion, and Merlin is about to be opened, which could cause the swift destruction of the entire Terran Federation. Thus, the climactic scenes in *The Cosmic Computer* can be called the 'Merlin Crisis', paralleling a Seldon Crisis.

12. Now for a brief aside. Verisof tells Mayor Hardin (who in Piperian terms would be called a self-reliant man), that the Actionists "are attacking you with everything short of political violence."⁶⁴³

Beam improves on Asimov by including the political violence. And this is not just the fighting between the various political factions and the planetary government. It is personal to Conn Maxwell and his father Rodney, Beam's main self-reliant men in the book.

The second time Conn returns from Koshchei, his father meets him at Storisende spaceport, wearing "a holstered automatic on each hip. In Litchfield, he never carried more than one pistol, and Storisende was supposed to be an orderly place where nobody needed to go armed." There's also a "Ship-guard" to protect the crew coming off, who will then be transported to the Interplanetary Building in a troop carrier; but before they can board, someone sends a robot-controlled aircar to bomb them on the dock. This manages to break through a defensive police line, and Conn notices that it is "rushing toward them". The Maxwells dive under a lifter-truck, and the aircar-bomb is fortunately intercepted and detonated by a missile from a gun boat.

When Klem Zareff complains that Rodney's detectives aren't investigating the Rev. Carl Leibert, whom Zareff suspects of being a Federation spy, Conn replies "Well, they've been busy... Trying to keep him alive, for one thing. You heard about the robo-bomb somebody launched at us the day we brought the ships in, didn't you?"

In addition to this blatant attempt on their lives, Rodney informs his son that his personal secretary, Lucy Nocero, was recently turned into "a complete imbecile". "Somebody who either didn't know how to use one or didn't care what happened had used a mind-probe on her. It's twenty to one she'll never recover."⁶⁴⁴

13. As an aside to this aside, Piper's mind-probes seem very similar to the Psychic Probes in Asimov. Both are used in a military context. In *Foundation and Empire*, General Bel Riose takes a ship into the Periphery to investigate rumors about "the magicians" who live there, and is captured by these same magicians, who are simply the technologically-advanced men of Terminus. The general is questioned by the Foundation, as are his men, some of whose interrogations involve the use of physical assault, drugs, and being psychically Probed "unmercifully".

After returning to his fleet, Riose captures one of the Foundation's Independent Traders, a man named Lathan Devers; and while Devers sleeps, Riose attempts to use a Psychic Probe of his own. But it is unknowingly foiled by a bracelet Devers wears, which is really a Field Distorter. The Privy Secretary, Lord Ammel Brodrig, sent by the Emperor to keep an eye on Riose, believes that the general is simply lying, and that important information he extracted from Devers' mind is being withheld from him, and by extension, the Emperor.

Through contact with other captured Foundationers, General Riose deduces that he was tricked by Devers, and threatens to Probe him and Ducem Barr, after ordering them to remove their bracelets, as well as any other metal ornament they are wearing.⁶⁴⁵

In Piper, the mind-probe is also used as a military tool. After General Shanlee is prevented from detonating his vest-pocket thermonuclear, which would have destroyed himself, Merlin, the entire Fawzi's Office Gang and probably all of Force Command Duplicate, Conn threatens to use a mind-probe on the general. There's one in "the Chief of Intelligence's office, here in this headquarters. I should imagine it was to be used in interrogating Alliance prisoners, during the War. I think Col. Zareff would enjoy helping to use it on you. He used to be an Alliance officer."

As in Asimov, the Probe will be used unmercifully. Conn asks Shanlee, "You know what a mind-probe is? You should; your accomplices used one on my father's secretary. She's a hopeless imbecile now. You'll be one, too, before we're through with you. But before then, you'll have given us everything you know."

In sum, the Foundation uses a Probe on detained Imperial soldiers, and then an Imperial general attempts to use it on a captured Foundation trader during the Empire-Foundation War. Meanwhile, the Federation used probes on captured Alliance soldiers during the System States War, while an Alliance officer now threatens to use it on a captured Federation general. Thus, the Empire and its general against the Foundation; the Federation and its general against Poictesme, Piper's 'foundation' planet.

One major difference is that Beam considered the legal implications of such a device, apparently neglected by Asimov. Deliberately turning someone into a hopeless imbecile, a sort of 'living death', should of course fall under laws against assault which deliberately result in serious brain injury. And when Conn threatens to turn General Shanlee into just such an imbecile, Judge Ledue strenuously objects. "A mind-probe is utterly illegal; why, it's a capital offense!...Conn, I forbid you..." A capital offense is of course potentially punishable by death, but Conn is not bluffing. He threatens to have Klem Zareff's guards remove the judge; and faced with Conn's unwavering determination to mind-probe him, General Shanlee finally gives in, telling the Poictesmeans everything he knows about Merlin.⁶⁴⁶

And now back to the Seldon and Merlin Crises.

14. As the Seldon Crisis unfolds, the *Wienis* is remotely deactivated via an ultra-wave relay, thereby preventing the Foundation from being conquered, bombarded or destroyed. His evil plans thwarted, Prince Wienis kills himself; Mayor Hardin then signs a treaty with the frightened and over-awed King Lepold of Anacreon, followed by treaties with the other Four Kingdoms, which will prevent any similar attack on Terminus from ever occurring again.

Hardin's successful conclusion of the external Crisis defuses the internal threat of the Actionist Party as well, whose members belatedly realize that the Mayor is not a traitor, and so quickly change their tune. "They had joined in the vote of confidence; made speeches in which they publicly admitted that they had been in the wrong, apologized handsomely for the use of certain phrases in earlier debates, excused themselves delicately by declaring they had merely followed the dictates of their judgment and their conscience—and immediately launched a new Actionist campaign."⁶⁴⁷

In Piper, the threat of annihilation from Koshchei similarly 'deactivates' the internal crisis on Poictesme, which is peacefully resolved. The Poictesmeans are "shocked...into momentary inaction" by the ultimatum from Koshchei; "a cessation of fighting" is quickly reported, and "by midafternoon, the rioting had stopped." Within twenty-four hours, "the forces of sanity and order had gotten control again"; the leaders of the various warring factions are arrested, and their followers disperse. Rodney Maxwell is released from prison, and, under pressure, President Vyckhoven "ordered the Stock Exchange closed" and "declared a five-day bank holiday", which prevents the revived planetary economy from collapsing. General Shanlee is likewise prevented from blowing up Merlin, and taken into custody. The dreaded Cosmic Computer itself is opened, and revealed as "nothing but a lot of dials and buttons". In other words, just another computer, causing "the majority" of people to be "ashamed of their hysterical reaction." Finally, from an "unconscious" state in which she is "barely breathing", Conn's mother completely recovers from her collapse.⁶⁴⁸

Thus, the internal threat dissipates, in turn defusing the external crisis. No super-missiles are fired at Piper's 'foundation' planet, which is spared devastation.

The difference is that in Asimov, the defeat of the external threat (Anacreon) causes the internal threat (the Actionists) to subside. But in Piper, the reverse occurs. The external threat (Koshchei) causes the internal crisis (the Armageddonists, Cybernarchists, etc.) to be resolved, in turn causing the external threat to subside.

15. In Asimov, the defeat of Anacreon actually concludes the second Seldon Crisis. In the first Crisis, thirty years previously, Mayor Hardin overthrew the incompetent government of the Encyclopedists, led by Director Lewis Pirenne, and seized control of the Foundation. Hardin then successfully dealt with the Crisis, which at that time involved Anacreon trying to annex Terminus.

And in Piper, the first 'Merlin Crisis' will soon be followed by a 'mayor' who similarly takes control of his 'foundation' planet. After the successful conclusion of the crisis, a planetary election is about to be held, in which it is all-but-certain that Mayor Kurt Fawzi will become the next President of Poictesme. He will therefore replace the current president, Jake Vyckhoven, who has (along with the First-Families-of-Storisende oligarchy) been running the planet in an incompetent manner.

Hardin's seizure of the government was through a bloodless coup, and Fawzi's election will similarly be a peaceful transfer of power. (See **Mayors Take Over the Foundation Planet**, section 32 in the main paper.)

16. Asimov never mentions the *Wienis* again (more minimalism), but after the Seldon Crisis passes, the ship should be easy to reactivate. Thereafter, it likely becomes a force for good, in the role of protecting Terminus and the Seldon Plan, rather than threatening it.

While in Piper, and even before the 'Merlin Crisis', the *Ouroboros II* becomes a force for good, promoting the Maxwell and Merlin Plans, by developing Poictesme's economic links with other worlds. After being loaded with cargo on Poictesme, its first voyage is to Baldur, and it returns in time for its captain, Yves Jacquemont, to give his daughter Sylvie away to Conn Maxwell at their wedding.⁶⁴⁹

Thus, the first link has been forged in Poictesme's interstellar economic rise under the Merlin Plan. And with all the leftover Federation combat equipment lying around, its military rise (bringing in the *Wienis* parallel) should soon follow. Probably including the recommissioning of all those ships on Koshchei, as well as building new ones at Port Carpenter.

17. It should be noted that "The Mayors" section of *Foundation* takes place when the faith of the Galactic Spirit—presumably an invisible yet omnipotent cosmic deity, but in reality the Seldon Plan turned into a religion—dominates the Four Kingdoms surrounding Terminus.

And in *The Cosmic Computer*, the religion of the Poictesmeans centers around Merlin, which is an invisible (because its location is unknown) yet omniscient (because its memory bank contains all human knowledge) "robot god", which can predict future events just like the Seldon Plan; and will solve all their planet's problems when it is found.

Moreover, from Piper we know that, sometime after AE 896, Merlin is transferred to Gilgamesh. There it apparently creates its alter-ego, Yah the Almighty; an imaginary cosmic deity whose creed is probably the Merlin Plan turned into a religion. (See "**An Entirely New Religion**", section 24 in the main paper.)

18. There's something interesting about another one of the ships found on Koshchei. This is the interplanetary vessel *Helen O'Loy*, originally from the city of Anaïtis on Jurgen. The ship is used to transport scanning and mining equipment from Koshchei to Poictesme, in order to aid Kurt Fawzi's search for Merlin at Force Command Duplicate. Then it is used to transport 200 workers from Poictesme to Koshchei, some of whom are used to help finish the hypership *Ouroboros II*.⁶⁵⁰

"Helen O'Loy" is the title of a robot story, by Lester del Rey. Published in 1938, the story involves "Two young men, a mechanic, Dave, and a medical student, Phil, [who] collaborate on modifying a household robot, originally meant only to cook and clean."⁶⁵¹ Piper must have been familiar with the tale, because his story likewise involves two people—Conn Maxwell, a student of cybernetics, and Sylvie Jacquemont, a mechanic—who modify household robots, which cook and clean.

The Maxwells have at least three household robots, maybe four. First, there's a "serving-robot" that brings them breakfast, then another that cleans up after and washes the dishes (though this may be the same as the serving-robot), a "laundry-robot", and then a "housecleaning robot" which vacuums and dusts. The housecleaning robot is named Oscar, whose first initial may have been inspired by the 'O' in O'Loy. None of the other household robots are named by Beam, but they do have names. Because when Conn brings Sylvie to his home after the Battle of Barathrum, "He and Sylvie tore down his mother's household robots and built sound-sensors into them, keying them to respond to their names and to a few simple commands, and including recorded-voice responses in a thick Sheshan accent."⁶⁵²

In del Rey's story, Dave marries the humaniform robot Helen O'Loy, and in Piper's story, Conn marries the human robot-modifier, Sylvie. Thus, in del Rey there are two human men and a robot woman, which marries one of the men; while in Piper, there are two men (one of them a robot, Oscar) and a woman, who marries the human man.

We can add that in his story, Beam mentions many robots, including some that Conn and Sylvie modify into weapons during the Battle of Barathrum, or which attack human beings through errors in their programming, or misunderstanding by the humans, or other factors such as radiation (in the factory on Koshchei).⁶⁵³ While Asimov's Robot tales do include malfunctioning robots, Piper's use of military robots in particular puts the lie to Isaac's (and John W. Campbell's) famous Three Laws of Robotics, in which no robot may harm a human being, or allow harm to occur through inaction. Beam's common-sense reply seems to be that any new technology, including robots, will be used for both peaceful and warfighting purposes. And recent history, with the rise of military drones and other automated platforms, has proven Piper right. (See **page 3** in the main paper.)

And finally, while I'm not sure the next is one of Piper's conscious parallels, it does seem interesting.

19. After discussing the coming Seldon Crisis, but before it occurs, Hardin tells Verisof "Let's go out and make a night of it. I want some relaxation." Verisof replies, "Then get it right here...I don't want to be recognized, or you know what this new party your precious Councilmen are forming would say. Call for the brandy." "And Hardin did—but not for too much."⁶⁵⁴

On Poictesme, however, there *is* 'too much' brandy. It's what everyone in Litchfield drinks, because it is the product of wine-melons, which are grown throughout the Gordon Valley. "[D]rink up, everybody. We have plenty of brandy, if we don't have anything else." Another reason there's too much brandy is because they can't sell it profitably on the interstellar market. At the beginning of the story, long before the 'Merlin Crisis', Klem Zareff "cursed", saying that they had a "Gehenna of a big crop; we're up to our necks in melons. This time next year, we'll be washing our feet in brandy."⁶⁵⁵

Once they complete the hypership *Ouroboros II*, however, they solve the 'too much brandy' problem. Now the Poictesmeans can sell it profitably. "Cargo was being collected for her; instead of washing their feet in brandy, next year people would be drinking water. Lorenzo Menardes had emptied his warehouses of everything over a year old; so had most of the other distillers up and down the Gordon Valley. Melon and tobacco planters were talking about breaking new ground and increasing their cultivated acreage for the next year."

And at the end of the story, after the 'Merlin Crisis' has been resolved, Col. Zareff reiterates the statement he made at the beginning, but in a much more positive tone. " "Oh, Gehenna of a big crop!" he heard Klem Zareff's voice, chuckling happily, above the babble in the room. "You wouldn't believe it. Why, we had to build six new vats..." "⁶⁵⁶

