

Aliens' Review

by Yuri K. Shestopaloff

That was the last planet with supposedly some life form to review. Waiz, a Teacher, and Yang, a Pupil on his second Review trip, were curious creatures, as most descendants of Chronus were, now living on different planets of Galxy formation. However, assessing hundred twenty civilizations, some occupying many planets, in one trip... That was too much even for their inquisitiveness, but the call of duty was as strong as ever.

Waiz looked at Yang thoughtfully, and said: "You are progressing fast, Yang. I think you should go alone one more time. I have to check things for the jump to Chronus anyway. It's a long one. Recall, we almost missed that messy planet...", - Waiz paused for a moment, and finished with a relief, "Supraniyemi, yeh. Supraniyemi. Messy name too."

Yang was delighted. Even doing one planet review alone was a great honor for any Pupil. Yang will do *two*!

Waiz kept silence for some time. Then he continued: "See, Yang, judging by trajectory, that's one of the agilirators' thing - it might not convert the mass to Field fully.¹ Not much, just a little, but that was enough to pull us aside". Waiz looked at Yang - did he understand him? Yang did. "Good boy", - warmly thought Waiz.

A Teacher transfers his skills and knowledge to a Pupil, in order to preserve the continuity of civilization. That's the Chronus's Rule. (In Chronus, Rules are not obeyed, like the things called Laws in civilizations, which are in the earlier development phases, but *accounted for*. Chronmen

¹ Agilirator converts mass into a Field for fast travel, and then the Field back to mass.

may not follow a Rule, if they think it is better to do so, but they take *full* responsibility for the task's fulfillment.) The foremost Teacher's accomplishment and reward is to teach a Pupil to *Think* and *Act* on his own to get the job done, in any circumstances. In *Any*. Chronmen come and go, because all living creatures are mortal. Civilizations come and go too - they are also mortal. But there is no need for this to happen prematurely, and, as a Chronman leaves descendants, in the same way any civilization has a chance to leave a seed for a new one after it's gone. So, keep your society, and this will keep yourself afloat too. Whatever is good for the Chronmen's civilization, should be transferred to next Chronmen, to Pupils, but not as simple sum of knowledge and skills, but *Abilities*, because no knowledge is ultimate, no skills are perfect and always up-to-date, and no environment remains the same. It is only when the level of Abilities is above the Demands, civilization can survive and - sometimes, and usually for a short period - prosper. Tough was life for Chronmen; always tough. But they survived, and hopefully will continue to do so for a while.

They went to the agilirators' block, both stocky, with a smooth cover of enormously powerful muscles over the entire body, precise and quick in movements. Yang turned the heavy latch, attached on axis to the door, jerking it from the nest on the wall, and flipped it into another nest on the door. Thus, the latch instantly became a door handle, and Yang opened the massive protection door. Use your body to the most, whenever you can, this is the Rule of Chronmen. Simplicity and Efficiency was another Chronus's Rule. Keep things as simple and efficient as possible - like this latch. Wrap everything to the core, remove unnecessary things, all the time, do not allow growing complexity. Complexity first kills efficiency, then it kills progression, and finally the Ability. It's easy making a complex thing, being it a tool or a hypothesis. What is really difficult, is finding simple and efficient solution for a real complex problem.

Yang instantly relaxed, stabilized his mind and began thinking, where to start from. Agilibrator is a simple thing; it just converts the wrapping mass into the Field on long trips, and then the Field back to mass, when the journey is over. When it adds needed energy, mass becomes the Field, and vice versa. Waiz also looked placidly and attentively first, and then stepped back - he got the clue what was going on, and now watched his Pupil.

Yang checked the energy dispenser. It looked alright. Then he inspected the channel. Should not be a problem. But then what? Look first for the most simple and unexpected causes. What is the most unexpected expectation? Mechanical failure, probably. Agilibrators used to be considered very reliable things. The reliability comes from the simple physical principle and... And what else?.. Mechanical reliability! Right! But thousands of harsh landings during this trip, collisions, aliens' preemptive bombardments, aimed for destruction of their vessel... Hm-m... Maybe deformation then? But where? Channel is probably the most vulnerable part. Let's check it one more time. Yang squatted, sized along the channel edge. Yup. It's bent. Very little, but it's enough to change the energy flow. Yang wanted to get a sledge and the guiding ruler with clamps right away and streamline the channel. But wait a little. Anything else? He thought for some time, only to become more convinced that he pinpointed the problem right. He went to the tools' stand and pulled the sledge first. Only then looked at Waiz. He glanced approvingly. Using the sledge and the ruler, they fixed the channel. The harder and the riskier the mission, the more reliable, more efficient and simpler a tool has to be. The sledge was up to the task in *their* situation. Whatever tools one could use, and Chronmen have many of them and invent new all the time, the Rule is that no tool can jeopardize the Control.

Then Yang left for a planet review, and Waiz started figuring out, how to simply and quickly test the repaired agilibrator.

Yang came back tired, but in a good mood. He did not find anything valuable for Chronmen, , as he eagerly would like to, and which was the main purpose of their mission, but at least he did his best to make a thorough and comprehensive review, and that gave him a pleasant feeling of a well done job.

Waiz, once he knew that Yang set on a back trip, felt a relief. Every such a trip entails risk; in many instances, on the verge of bringing Destruction to them. Waiz knew that Yang attained a degree of Control sufficient to make a trip to this planet alone, and so, as a Teacher, he should not provide an additional protection and restrict his initiative, thus maximizing his pace of learning. And still, Waiz worried. Living creatures are guided by reasoning, emotions and instincts - in different proportions. One can control emotions, but not eliminate them. Regardless of how low is the calculated probability of an accident, Waiz knew all too well how quickly and unexpectedly the situation can change, and how fast and unavoidably Destruction could come.

"Anything useful to us?" - warmly asked Waiz, still feeling joy to see Yang back.

Yang, removing the travel suit, replied with agility of youth: "As a confirmation of how things should not be done, rather yes. Otherwise, nothing to borrow at a first glance. Pretty much the known stuff and the beaten path. But let me think the Review over. Maybe something will come up later."

"Good. Let us start on our way first, and then you report", - said Waiz.

In silence, they simultaneously looked through a porthole on a blue planet Yang has just returned from. Then Waiz pulled and fixed at nests two levers. If they would look back, they could see how the bluish planet almost immediately reduced into a point, and then the point quickly melted. But they did not.

In a small and tidy meal cabin, resembling rather a deep niche, after they ate, Yang went into more details.

In Exploration of Essence - those creatures, hemans, call it 'Science' in their language - they started not bad, Teacher. As we, they had two types of thinking at the dawn of civilization. At the first level, Collectors were warehousing facts and just postulating things, which thought to be right, without much thinking about proving them, like collecting triples of numbers, the sum of squares of two of which is equal to a square of the third number¹, without knowing that this is a general property, which has a universal meaning. In their language, it is called Babylonian thinking. The Second level, making generalizations and providing general proofs, is called the Greek way. Those ancient Greeks were similar in thinking to ours First Chronmen, who were the only ones to survive the Great Galxy Chasm, thanks to their Abilities, while the rest, thinking like those Babylonians, perished. (Chasms were spontaneous unpredictable transformations of space in the Galxy, not rarely resulting in intractable collapses of huge space regions.)

Greeks discovered some laws of nature early on, like the force acting on a body in liquid, got mathematics to the right path - simple, consistent and based on axioms and proofs of Conclusions - they call them Theorems; figured out the shape and size of the planet and things like that, typical for the successful starts of Life.

Waiz, mathematically inclined, asked, did they know how to find all prime divisors of any number? No, they did not, and still don't know how. They figured out about the gravitational mass attraction though, discovered particular *subfields*, and managed to mathematically describe some of them about right.

"That's pretty good!" - with some surprise in his voice commented Waiz.

¹ On the Earth, these numbers are known as the Pythagorean triples.

While they did Exploration in a Greek way, the knowledge acquisition, indeed, went normally, confirmed Yang. However, then more humans began doing Science. As you taught me, Teacher, not many living beings can do Exploration, and that should not be stimulated by a material gain; materially and securely, Exploration has to be disadvantageous compared to other occupations - in order to keep away profiteers and allow Explorer concentrating all his force on discoveries. Mind has to be clear and open for that. The rest, having brains and willingness to use them, should become Applicants - solving real practical problems using specialized knowledge and skills, and get as many material and other rewards for creating useful concrete things. Let them work for a clear and needed *purpose*. Without a concrete directing purpose, Applicants are lost, deflect from the optimal for them path, thus making no good for themselves, neither for the society. Explorers also solve real problems, as Applicants do, and it's actually good and necessary for everybody to deal with *real* problems, and learning from the best Teacher - the Reality. However, unlike Applicants, Explorers are able and like to handle difficult problems and capable doing generalizations; they see the core Essence behind and above concrete things and problems. That's the difference. But it's a big one. Do I understand it right, Teacher?

Waiz nodded with a shadow of satisfied smile. "Correct. Everything worthy comes from a Reality, either as a direct consequence or as a higher level adequate abstraction. Until the abstractions are adequate the reality, they work. The more abstractions detach from the Reality, the more erroneous they are. How much erroneous?.. Practice, as a feedback interaction with reality, and derived from its validation criteria, is the answer.

There is another aspect of Exploration. Discoveries making turning points of civilizations require lots of energy and powerful concentration. Such discoveries are about breaking high thresholds and making long jumps, but that needs very strong bursts of rightly concentrated

energy, which is a task for few. The thing is that the Exploration and Application are very much different things, but this difference is too subtle and even indistinguishable for many to see it. It's like ultraviolet range of spectrum, many creatures are incapable to register and to see its beauty. As in exploration of new space regions and territories, moving frontiers forward is a task for few; they explore the space for the many to come and develop it, make it habitable, while Explorers continue moving further. An idea of sending many Explorers is obviously a ridiculous one when it comes to going to unknown regions, because these are risky projects, and, besides, Exploration, by its nature, does not need many. And, it's just impossible to find many real Explorers, eager and able to do that. The same thing with 'Science'. Its frontiers are for few, the rest can only develop the explored and mapped area, which is also a much needed and respectable work to do too. These two activities are separate in our world, you know. Those hemans, due to abundance of resources, mixed these rather incompatible things together, sending massive troops to frontiers, instead of few Explorers, and so they got what they got - a stampede in an unexplored new territory, with little rules and order."

Yang thoughtfully reflected on Waiz's words for some time, and then continued his report. Indeed, hemans broke this Rule, and so Collectors came to Exploration to get spoils, rewards and Resources. As it happened on other planets we have seen, Collectors ruined many things in Exploration. Then, hemans invented Number Crunchers (call them Computers), and many things went awry since then, turning to non-optimal paths. Instead of proving Conclusions and finding Real Supports, the Proofs, they started to *postulate* Conclusions, Teacher! They postulated before some things about gravity and finite field speeds, thus creating the precedent, but that was just the beginning. Instead of studying the *real* world and doing *real* testing, in many studies, they began relying on mathematical models, computer simulations and assumptions *only*! One can devise any

mathematical model and do any simulation, of course, but it has to be always tested in the real world, tied to it by *practice*. However, they broke this Rule too. Worse, Teacher! Babylonians brought the cult of Complexity, and so, obviously, Exploration came almost to a halt in some areas. From proofs and real Exploration their 'scientists' came back to Beliefs, and now such groups wage wars against all and everybody who do not share their Beliefs, while unproductively consuming societal resources.

Another problem with those hemans is that they, indeed, make no distinction between Exploration and Application, and, of course, few Explorers they could have were overwhelmed by Applicants and driven out of Exploration. In order to recognize an Explorer, one has to have an idea, what Exploration means, an appropriate environment to foster Explorers, and a social mindset, to allow them to do good for the *whole* society. The overwhelming majority of 'scientists' neither know what the real Exploration means, nor do they have a social mindset, save for their group or clan, when they oppress others or guard their territories of influence - which is what they do most of the time.

Waiz noted: "Yeh... I always wonder, Yang, how the living creatures around the Universe are very much alike, once they got some resources. Lucky we are that life was extremely tough on us. And still is. Keep it this way."

"I will, Teacher. I will", - Yang replied with a mighty, powerful voice, as if he was not tired at all.

"What about the Particles?" - asked Waiz.

"They started right, Teacher, and even got the Energy Release, producing the First Blast¹ - of course, for the distraction of their enemies first, same as everywhere. Then they harnessed the First

¹ Explosion of a fission nuclear reaction bomb.

Blast, and began producing energy. They also did the Second Blast¹, and, while the Greek thinking was in use, attempted to harness it too. However, soon Babylonians overwhelmed, and the things were screwed up, as it had to happen with Collectors."

"So, they don't know about the Limit", - summarized Waiz.

"They don't, Teacher. Nor even close", - replied Yang.

"What do they know about Space?" - inquired Waiz.

Yang shrugged his broad mighty shoulders. "Hard to tell, Teacher. Rather at the beginning. So many different and often conflicting views on what they call 'Cosmos'. Some hemans occasionally make right judgments, but others do not hear them. Collectors always have had problems with validating things, same as on other planets. They proclaim a postulate, which is impossible to prove, and then stick with it. This is what Collectors always do, we saw this many times."

"Anything worthy about Life?"

"They realized the very first principles of Progression, which they call 'evolution', but then rather stopped for the same reasons as in other Explorations - too many hemans, most with Babylonians thinking, rushed to the area too, for the sake of material acquisitions and safety, while Exploration requires just few good and unobstructed minds, which rarely appear, being capable taking risks, and being ready receiving little rewards and distinctions during their lifetime, if any - that's what you taught me. Explorers, whom they could have, were overwhelmed by Applicants and mostly were driven out of this field too. So, kind of messy now on that. Oh, yes! They know about Life Memory, and, in their case, its double helix structure - they call it DNA. The thing is that they assigned DNA the Cause of Life, making this dubious idea sort of Sacred Belief, and want to hear nothing else. There are few hemans, which do not agree, but nobody listens to them. (It seems that it is not in the hemans' habit to listen to each other and to search for Essence. They

¹ Thermonuclear or fusion reaction; here, Yang means an explosion of a thermonuclear bomb.

easily go to every extreme and beyond to get a minor personal gain, even for the price of huge societal loss.) Surprisingly, one heman discovered the Second Cause of Life, but that discovery is beyond their comprehension. Mathematical and statistical toys substitute for the actual Exploration of Reality, for the discovery of real fundamental laws, Testing and Validation, and for the Quest for *Essence*. Somehow - I could not figure out, when and who started it - but they managed to convert Exploration of Life to mathematical and statistical simulations too!"

Waiz grinned. "Sure, yeh... Why should one look at *real* Life, when he can do an abstract simulation? If one really wants to screw things up, he needs a Number Cruncher. It is easy to obtain result in statistics, and doing simulations on 'computers'. The thing is how to prove that such results are right, which they rarely are. If we went this way in Galxy... We won't be around long time ago. Simulations would not help us to get through even a single Galxy Chasm, but we survived thirty seven by now, and each could be easily the last one for all of us. Live in Reality, as close as possible, and train and verify your judgment by real tests, all the time - that's how Chronmen survived." He paused, and then asked: "Anything valuable about society?"

"Highly hierarchical, Teacher. Far below the Control Abilities. Basically, everybody has to fight for himself against all. Some organize into clans and groups for that, but still rival inside then. The planet has the vastest resources for its size we have ever seen, could be enough for everybody, but they made not much use of them, making their lives chaotic and anxious. Fighting is going on between large and small groups, at all scales and levels, all the time. In this regard, they are probably above the average aggressiveness, what we have seen so far. The creatures have energy, but little understanding how to use it properly. Individual possession of resources is the main societal dogma now, from which their armed quarrels start. There were attempts in the past to make the resource distribution more optimal, but those hemans were defeated. Does not look that

the next serious attempt might come soon, but who know - things began deteriorating fast recently, especially the rise of inequality, pushing more and more creatures to the brink of survival. Overall, it seems that not many of them will be left, if any, at a first serious trouble. The smallest Chasm - and they will be finished. It's just the prosperity and temporary safety of their planet what keeps them still alive, that's my impression. Disparity and societal disintegration made good to no society, and more often than not led those civilizations to quick extinction; we saw that on both trips, and on so many planets."

Waiz thought for some time on what he heard and then thoughtfully said. "The Rule is that living beings in groups should never delegate control of their lives to anybody more, than the situation requires for optimality, which means the highest *Abilities* of the *group*. Not many civilizations live to this Rule, but some do, especially where life is tough, like on Chronus. There is no other way to rise to the highest Abilities and meet the Demands, other than making egalitarian in rights and opportunities, and meritocratic in action society. It is easy to make any living creature like the most thoughtless and wildest animal is. Just don't help them to become cleverer; deprive them even bare minimum of needed resources, and the degradation is assured. And this is exactly what such societies do. Everything in measure, including measure. Extremes converge; both abundance and lack of resources lead to degradation, we have seen plenty examples of that, don't we?"

This is a common and shared by most *constructive idea*, which unites living creatures with minds and reasoning, and makes a *civilization* out of them. No such an idea - no civilization. Chronmen may choose leaders for an occasion, but only for that occasion. That is the Rule. Otherwise - everybody is on their own guard of our civilization, alone, or in groups, originated on different grounds; usually in groups - Chronmen cooperate easily and naturally, they still share so

many common values, even though now many live on different planets. Yeh, and we share the Chasms too, which is, probably, the most important thing cementing our unity".

He looked at Yang. "Well, we did not expect much from this planet anyway, Yang, didn't we? It would be nice to find something useful, but it's alright. Good things require lots of work. Lots of and lots of. Don't be discouraged. It's just such a probabilistic process."

"But, Teacher, we could maximize the probability to make the Review more worthy."

"Yes, Yang, we could. Actually, we should, for Efficiency. However, only when it's appropriate. There was not a reliable threshold for such low probability, to make any prior sound judgment, visiting the planet or not. And, by the way, we got more proofs how things should not be done, which is a worthy result too. How did you say - Babylonians?.. Yeh, they would immediately postulate such a probability. Not us, Yang, if we want to be alive for some time. Too many, too subtle factors to rely upon numbers. Every instrument has limits, being it a sledge or a mathematical algorithm. Don't cross the boundary of tool's applicability, which is not a permanent thing either. In a situation, when you are not sure about the boundary location, just go and take a look - yourself. Life is not so much about numbers, as one might think, even though I like math. See this as a Lesson for you.

Exploration, and any action for that sake, is as good as it *serves* Life and Reality, and as long as it *belongs* to them. Otherwise, there is no meaning to it. Recall planets from Virtula on our first trip. Their civilizations went really far, but then they added a little bit pleasant virtual reality, then the slight distortion of knowledge for the same purpose, then they bent the Essence and Moral somewhat, to get a personal gain, and the roll went on... And where are they now? Desolate places those planets became, we saw this. That's the price for ignoring reality. A harsh price, but this is

how the Universe works, and, so, that's a fair work. Just take its workings as they are, and go from there. And, keep it Simple. And Real. Always."

In a porthole, they sized the ominously trembling, like in a convulsion, distorted contours of approaching Galxy. Waiz could not even imagine a Chasm on a scale like this. Instantly, both jumped to pilots' stalls and grabbed the levers.

"Chasm thirty eight", - said Waiz assertively. "If we could make it through, it's going to be the Huge One! Full Fourth Blast to all agilirators, Yang!"