



THE ORTHOVERSE UNPACK

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A DIANA RAAB FELLOWSHIP PROJECT

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Contents

<i>In Paris, Punta Arenas, Palo Alto, and Papatoetoe</i>	9
<i>Meanwhile, in Pulaski, TN</i>	31
<i>The eclipse in Punta Arenas</i>	35
<i>A while back, in a village near Pskov</i>	41
<i>There is no place called Philosophy, yet we keep returning there</i>	45
<i>Bicycling outside of Panvillaya</i>	51
<i>A year in the life of a factory in Peretu</i>	63
<i>How the second battle of Princeton started in a basement</i>	71
<i>Bibliography</i>	81

In Paris, Punta Arenas, Palo Alto, and Papatoetoe

*In which we get introduced to Setocras and to the humans
who created and trained it. For massive, non-emotional
intelligences like Setocras, connections can be made at great
speed but their interpretation often eludes the machine. We
meet four people and a dog who kindle the conversation at
the living end of things as they attempt to imagine the
Orthoverse.*

Elevator door. . . Ian stepped in and pressed 6 mechanically. He stood in front of the visor waiting for his apartment door to open into the small entryway, now turned ad-hoc into a decontamination area. He stopped to place the items for facial protection into a sterilizer, removed his trench and sneakers, washed his hands vigorously, and discarded the paper wrapping of the fresh, warm baguettes. Then, he exited the entryway triggering the sterilizer that would make his garments safe for the next outing. Luckily, Franprix is just across the street but today Ian had to push his way through crowds that poured towards the rat infested intersection where *France d'Antan* were rallying. He avoided eye contact, slithering as through a parallel reality. His protection gear was drawing unwanted attention already: acknowl-

Meanwhile, in Pulaski, TN

In which Setocras produces a social simulation about the perfect crime: the crime by trust and persuasion. His creators start to realize that they could monetize Setocras on Netflix. This allays some of their financial fears.

Lauren hurtled out of the black limousine and fell heavily on Jeff's cousin's shoulder:

"Where is God, Mel? Where is God? I'm alone and without God, Mel. If God is good and all powerful, why did Jeff pass?"

"Come Lauren, you have to rest. It will take some time for you to find closure. Jeff left you quite a large fortune. I know a few excellent therapists. I'm not saying it's okay that Jeff died, no, the Lord is my witness how much I loved Jeff, but the sadness must end here. Jeff would have wanted you to heal and continue to enjoy life. Not now, of course, but . . . soon, . . . sometime."

Mel's husband made a desperate face behind Lauren's back. Mel responded silently 'I have to console her a little bit, what?' and then rolled her eyes at the man's too manifest callousness.

"Did you see his face Mel, after they took those loathsome tubes out of his chest, when he mouthed 'I trusted you, Lauren . . .' How peacefully he passed after that. The injustice of it all!

The eclipse in Punta Arenas

In which Setocras and Topal's team continue their mixed-intellect conversation attempting to explain morality so that even an AI can grasp the concept. But Setocras, like a gifted kid, is often ahead of its trainers. . .

"You would think we're 'close' but the cone of this eclipse does not cover any place near Papatoetoe," said Bertram.

"It's *my* eclipse then! And, look, we have totality! I'm cheering here with my dog Ziggy and a glass of ziggola, a drink of my invention which is as delightful for man as for his canid companion."

"You mean, you're having some water, right?"

"Yep."

"To think that, far from celebrating by toasting water - sorry, 'ziggola' - with their dog, only a few hundred years ago, people staged gruesome human sacrifices during eclipses. And whole populations *believed* that the sun or the moon would never come back without the sacrifice."

"An excellent example of how social status equates with 'power over other people' and also, of how immoral people can become if their social status allows it. The priests used to cut the heart of the victim right out of their chest *in vivo*, as we would say today.¹⁰ The scary part is that any of us could have been the executioner priest or the

¹⁰ Alfredo López Austin, Leonardo López Luján. Aztec human sacrifice. URL <https://www.mesoweb.com/es/articulos/sub/Sacrifice.pdf>

A while back, in a village near Pskov

In which Setocras proves itself to be quite prolific at social simulations and a new story takes shape from among the many stochastic paths it was able to generate. So realistic is the new story that Netflix executives almost cannot believe it is not written by some clone of the (demented) Nikita Mihalkov.

The leather of the heavy sheepskin that covered Olena almost to her ankles was cracked and patched expertly with wool thread. She had worn it ever since she had finished high school. The fur hat, however, was a recent gift from her mother, who could save bit by bit from her pension. Olena's boots were old and took water in at the seams. She had lined them with a couple of Aldi plastic bags brought by someone at her office from the West. They kept the water away from the feet, but not the cold. After one hour of walking up the mountainside she could not feel her feet anymore.

Volodya carried a tall military backpack, no doubt replaced by a smaller model when they had stopped lugging field telephones around. Its weight pushed Volodya deep into the layer of

There is no place called Philosophy, yet we keep returning there

*In which the man-machine conversation turns even more
anti-philosophical, yet stubbornly continues to hash out a
design for the Orthoverse.*

"I'd say it's time for a cup of black coffee, to get out of this gloomy phase of the meeting," suggested Lara heading for her moka pot.

"Yeah, it's time to go explore some tangents because the main topic is a bit stalled. Let's go back to that divisiveness. Remember how you were saying that Greeks put ostracism in place because they wanted to prevent influencers from dividing society into factions. And I was asking why factions were bad. There is this saying which I've never seen working, as a matter of fact - 'we agree to disagree.' Factions may have opposite views but why can't they find middle ground?"

"Obviously, because this is not math, where you can take the average of any bunch of numbers," said Stu whose forte had never been math.

"No, no, it is, it is math," said Lara, "except we don't know which the numbers are. To put this very simply, it's like this, Stu: anything that happens does so because some function is trying

Bicycling outside of Panvillaya

In which we take a detour through the future, to see how the Orthoverse turned out in the end. Unsurprisingly, Setocras is still around, more useful than ever, and much better a pedagogue. I like this future in which people look less tense. Maybe it's still one of Seto's simulations?

Leaving Panvillaya on their left, a small group of people dressed in cotton T-shirts and capri pants rode vigorously single file on a dirt trail. It had rained and small bits of mud splattered from under the wheels. Mud settled on the front plate of the cobalt blue robot that followed them. The air smelled as if exhaled by angels and the rays of the rising sun lit up a dome of wispy clouds.

When they stopped for snacks it became clear they had never met before that morning. The conversation went lightly over weather and meal quality. The chances they would meet again sometime were low, as this was not a neighborhood issue, but a large development project that concerned - at least - the whole of Panvillaya. They had been selected randomly from all counties to work on providing arguments regarding a site for an energy facility. The better part of the day would be spent getting there on bicycle. That way, they would gain a direct experience of the

A year in the life of a factory in Peretu

In which Setocras goes all in about the human race. Netflix rated it D for dubious moral values. Some viewers just enjoy the ride without asking 'quo vadat?' Others experience an 'I told you so' moment - it is one of these subscribers who recommended the simulation to me.

Taking a train seemed to be what Cornelia wanted the most. So many times, she had taken that train and passed by the beautiful deciduous forests, the muddy village outskirts with their ducks and geese and stray dogs, the red brick stations with their manicured flowerbeds where the station master blew the whistle feeling important in his uniform, the ruins of the Chiajna monastery said to be still haunted by the souls of Ypsilanti and Mavrogenes, the rows of sunflower that opened all the way to the horizon in their summer-long namaste, to finally end up passing a factory just before her stop. This factory had started when she was in second grade and there had been much discussion about its impact on the small community. But then it was there and it maintained railcars. It had a forge, some offices, and several hangars where the railcars were inspected, sorted, and repaired. It was ugly - and many people could still remember the grounds as the site of an annual fair. Now, instead of walking

there on warm fall evenings to make small purchases, to take the kids to rides, and to have beer and grilled meat at improvised nosheries, they had to line up at the gates of the factory every morning at dawn to punch in for work.

That was half a century before. Arriving from New York, where she worked as top brass in investment banking, Cornelia's job was to gather information about the local economy and opportunities for acquisitions. But, before meeting technophobic financiers and leafing through outdated presentations, Cornelia had decided to get a pulse from old schoolmates or just from strangers.

Efficient as always, she started a conversation with the taxi driver who remarked on her good accent and declared her swiftly as indistinguishable from the locals. This much reconnaissance work led to a bitter start: only few trains remained on the line she needed and none of them was express anymore. Instead of one hour, she would be looking at a ride of two and a half hours. Everyone took the bus now. However, Cornelia's memories dragged her towards the train station like so many magnets.

Not only did the train move slowly, it also made creaking noises and spent long intervals of time waiting in its tracks before heaving suddenly forward just when passengers had lost hope. Cornelia sat by a window and tried to not get overcome by jetlag. For miles, the city had sprawled outward into the fields filling the space with concrete buildings. Ugly from inception, they were by now already weathered, blackened, and crumbling amid patches of battered mud, overflowing refuse bins, and dusty old cars. Finally, after each minute grew its own infinite axis of time, they left the city behind and the eye could meet the

open field. But the sunflower fields had been subdivided into many patches, most of them fallow and overgrown by weeds. There were shantytowns everywhere. Their small, low houses did not look like they had ever been new. The roofs had been patched repeatedly with polyethylene foil, with pieces of wood or glass, all held down with bricks and stones. There were no gardens, just mud, but the presence of dogs and chickens meant there were inhabitants. The stations were equally derelict. Flowers no longer adorned their doorsteps, the wrought iron decorations of their wells were broken and rusty.

Shortly after having checked into a basic hotel room to spend some oblivious hours recovering from travel, Cornelia did not take too long to find a storefront with a familiar name on it: 'Sorin's Computer Setup and Maintenance,' strategically placed across the road from the City Hall. She stepped inside resolutely, dived into a thick cloud of tobacco smoke, and instantly identified a potential source of information in the person of a young woman who was carefully applying white polish to the tips of her fingernails: "Is Sorin in?"

"Yees, . . . he is in a meeting with . . .

Mr. Farcas. . . from Peretu council," replied the woman, visibly unsure of what or how much she was allowed to clarify.

"I'm supposed to be in that meeting too," said Cornelia with assurance. "Sorry for being late."

The woman looked annoyed. Should she put her nail polish away to show the visitor in or just give her verbal instructions? She decided to lead the way, careful to not touch anything, and waved to a side door.

"Cornelia! My God!" exclaimed a guy who had visibly spent a good couple of decades letting himself go, "Cornelia, you haven't changed at

all, or maybe just a bit, don't we all . . . What a wonderful surprise! Let me find you a chair. Mr. Farcas, let me get a chair from back there. Look, take mine, . . . sit on my chair, I'll find something," continued Sorin without making any obvious effort to rise while Mr. Farcas stood up to take his leave with a servile look on his face.

Cornelia accepted some coffee, brought in by the woman whose French manicure was by now dry, and refused several offers of cigarettes during the 'catching-up' phase of their re-acquaintance.

"Sorin, what happened to the railcar factory? All I saw from the train is a landfill."

"Ah, the railcar factory, the chicken and egg problem. Is rail transportation declining because of the demise of such factories, or the other way around? What happened to the railcar factory is not the answer to this question. If you want to know what really happened to it . . ."

"Yeah, I do. It seems interesting."

"It is. Listen, what happened is this," continued Sorin crushing a cigarette butt onto the plate of his coffee cup only to light another, "after the fall of Communism the ownership of these factories was distributed to the people directly in the form of shares. Imagine that! This was called *privatizing them* if that means they were *owned by the people in common* during Communism and they switched to being *owned by the people in common, but this time around privately* - well, nobody could really explain what the difference was. People had no idea what it meant to have shares and to vote in general assemblies. In fact, people continued to think their vote was useless, like it was in Communism. Nobody *educated* anybody as to what it meant to be a shareholder, an investor, or even a consumer. As a result, nothing

much changed for a short while except, maybe for show, the executives, former commies, were replaced with the leaders of the worker's union. But then, the government got some money from the EU in support of privatization and much of it was structured as forgivable loans to businesses. So far, so good, but at the same time, a delegation of dudes in mertzanes, all looking sort of like 'agent A', came to visit the management of the factory."

"Mertzanes?"

"Mercedes. Mercedes cars. It's some slang we use around here. Okay. So these dudes were from the Baptist Church of Pathfork, Kentucky and what they wanted was to purchase the factory with cash. Some of the cash and some bling went to the higher ups in the management. I don't know how much but rumors put it at one hundred thousand a head. Some extra bling for the head honcho, you understand, the former union leader guy. Easy. They told people to vote 'yes' on the acquisition because the factory would be revamped. Now, the factory was managed by some urbanite appointed by the church, who applied for a *very* large forgivable loan. The factory was old and big: it needed to be updated on a large scale and brought up to modern standards. The bank," and here Sorin made a waving motion at the newer building next to the City Hall, "the bank approved it and sent the paperwork further to the ministry. So this guy gets the loan and the next thing we know is that most workers are let go due to restructuring. The man kept a few accountants - Nick, you remember Nick? I know this from Nick. He told me some of this at a hunt. So next thing he knows is the guy buys some more mertzanes as part of modernizing, sells his older one to the bank manager for al-

most nothing, and then starts dismantling the forge, the rails, and the hangars. He sold them to scrap metal, got a pretty good deal. Scrap metal was very expensive at the time. He sold most of the equipment from the defectoscopy lab. I don't know who took that one, because it was older. Maybe he got just pennies for it, but it was soon gone. Then he fired half of the remaining workers and spent a couple of months traveling like the well connected leader that he was and making some 'deals' for new technology, equipment, and materials. After payments were made to some entities abroad and nothing was delivered, he filed for bankruptcy and left. It wasn't his fault he failed to modernize the shop, was it? He tried. Now the money was gone. The court had the grounds repossessed by the city - all the value that was left - and they were auctioned off to a guy who started a landfill. That is, really, the story of the railcar factory."

"And the people who worked there?"

"Who knows? Somewhere, wherever they are, they hate America while saving for an iPhone and watching the new Spiderman. The ones who did office work were employable. I hired a few who were able to better their English and put them on some contracts for customer support. By the way, I'm looking to do more support."

"Really? Exactly how good is their English?"

"Excellent. Let me show you. I have samples right here," Sorin opened an application that monitored his contracts' output.

"These are posts," said Cornelia, "posts for social media? This looks like Quora?"

"Yep. My people post anything you want. Right now they're posting for some institute in Russia, I think it's something like social research or something.²² They analyze the responses and

²² Alekseyeva, Nina, et al. Operation secondary infection. *The Atlantic Council*, 2019. URL <https://www.atlanticcouncil.org/in-depth-research/reports/report/operation-secondary-infection/>

crunch them through some big data engine, apparently. Look, look at this post! Hilarious," laughed Sorin amused at the imaginative output of his contractors, "hilarious, he posted about how medical care is free and prompt in Russia. No kidding. It's quite a bit worse than over here. 'Free' means you don't pay anything except for bribing the lab to find your mother's blood type, bribing the surgeon to not postpone her surgery until she's no longer alive, bribing the staff to find a wheelchair, paying the relatives who visit other patients to take care of your mother when you are not there, you know. You even bribe the morgue to issue the death certificate. The only thing free is the cockroaches. They're incorruptible. They won't be bribed to refrain from crawling over your patient at night.²³ I don't want to think what 'prompt' means, really. Yeah. I have some good people. Don't you like their English?"

"It's perfect. It's like native."

"Sure it is. That's why the Russians hire us. They can't get even close to this quality. And I'm looking for more contracts. If you could find some in the States, it would be awesome. The Russians pay little. For this quality, they pay very little. I have very good people and I can train more."

"Well, that sounds good. I'll see what I can do. It's not quite my field, but I do know a lot of people."

"Exactly. You can put the word out."

"Listen, Sorin, what ever happened to the guys who sold the factory to the church?"

"Ah, them. Well, one of them you know. You remember Misha? He built the house next to mine but then left to take on a job as adjunct minister for economic development. Then, he climbed the ladder from there and is now somewhere in

²³ Marc Bennetts. Cockroaches in the ward. *Newsweek Global*, 167(20):18 – 21, 2016. ISSN 25725343. URL <https://search-ebscohost-com.proxy.library.ucsb.edu:9443/login.aspx?direct=true&db=a9h&AN=119654265&site=ehost-live>

the European government. Another one is still here, you know him too, Sile. Sile became a first-class alcoholic. He once begged his friends to tie him up to his bedframe so he would stay off the booze for a while. Never managed to detox, though. I gave him a job out of pity but he almost never shows up. He's a ruin. And the third one, Michael, you didn't know back then but you might know him now, because he is a big director at the Bank of America in San Francisco."

How the second battle of Princeton started in a basement

In which Stuart does most of the talking. But, as we can by now easily tell, he started to sound a lot more like Seto. Is he also an AI? Ziggy might know.

Late March is when all the magnolia trees in Princeton - and there are plenty of them - decide to put on an early spring show. Like everything else in Princeton, they are very dainty and attention-seeking lifeforms.

Lara looked at the steps leading to a basement floor and somehow it occurred to her that once she went down them it would be a long time before she would climb them up. Above, there seemed to be a sort of canteen, judging by the smells and the noises of cookery that came forth.

"Good, we can order food without exiting the building," said Bertram while scoping out the place from the outside. "There's some natural light too through these hopper windows . . . Let's do the furnishing and decorating before Stu gets here with Ziggy to mess everything up. You bring the throw pillows. I'll be busy taking this stuff inside," he continued, pointing at the truck full of equipment.

Bibliography

Cheryl E. Abbate. "Higher" and "lower" political animals: A critical analysis of Aristotle's account of the political animal. *Journal of Animal Ethics*, 6(1):54–66, Spring 2016. URL <https://www.jstor.org/stable/10.5406/janimaethics.6.1.005>.

Marc Bennetts. Cockroaches in the ward. *Newsweek Global*, 167(20):18 – 21, 2016. ISSN 25725343. URL <https://search-ebscohost-com.proxy.library.ucsb.edu:9443/login.aspx?direct=true&db=a9h&AN=119654265&site=ehost-live>.

Jack D'Amico. Love and fear in Machiavelli's «discorsi». *Il Politico*, 45(3):429–441, 1980. ISSN 0032325X, 2239611X. URL <http://www.jstor.org/stable/43208620>.

Frans de Waal. Moral behavior in animals, March 2014. URL https://www.ted.com/talks/frans_de_waal_moral_behavior_in_animals.

Alekseyeva, Nina, et al. Operation secondary infection. *The Atlantic Council*, 2019. URL <https://www.atlanticcouncil.org/in-depth-research-reports/report/operation-secondary-infection/>.

Francis Heylighen. Stigmergy as a universal coordination mechanism (I): Definition and

components. *Cognitive Systems Research*, 38:4–13, 2016. ISSN 1389-0417. DOI: <https://doi.org/10.1016/j.cogsys.2015.12.002>. URL <https://www.sciencedirect.com/science/article/pii/S1389041715000327>. Special Issue of Cognitive Systems Research – Human-Human Stigmergy.

Alfredo López Austin, Leonardo López Luján. Aztec human sacrifice. URL <https://www.mesoweb.com/es/articulos/sub/Sacrifice.pdf>.

Niccolò Machiavelli and Edward Dacres. *Machivael's Discourses upon the first decade of T. Livius: translated out of the Italian : to which is added his Prince : with some marginal animadversions noting and taxing his errors / by E.D.* Printed by T.N. for Daniel Pakeman London, 1663.

J.K. Maner and C.R. Case. Chapter three - dominance and prestige: Dual strategies for navigating social hierarchies. volume 54 of *Advances in Experimental Social Psychology*, pages 129–180. Academic Press, 2016. DOI: <https://doi.org/10.1016/bs.aesp.2016.02.001>. URL <https://www.sciencedirect.com/science/article/pii/S0065260116300144>.

Parchen Markell. The rule of the people: Arendt, archê, and democracy. *The American Political Science Review*, 100(1):1–14, 2006. ISSN 00030554, 15375943. URL <http://www.jstor.org/stable/27644327>.

Christopher Marlowe. *The tragedy of Doctor Faustus*. Washington Square Press, 1959. URL <https://search.library.wisc.edu/catalog/999751307202121>.

- George Orwell. *Animal farm*. Harcourt, Brace and company New York, 1946. URL <https://nla.gov.au/nla.cat-vn4768083>.
- Marc Bekoff , Jessica Pierce. The ethical dog. *Scientific American Mind*, 21(1):16–17, April 2010. URL <https://www.jstor.org/stable/10.2307/24942985>.
- Paul K. Piff, Daniel M. Stancato, Stéphane Côté, Rodolfo Mendoza-Denton, and Dacher Keltner. Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences*, 109(11):4086–4091, 2012. ISSN 0027-8424. DOI: 10.1073/pnas.1118373109. URL <https://www.pnas.org/content/109/11/4086>.
- Plato. *The Republic*, page 558. Harvard University Press, W. Heinemann, Ltd., 1935. URL <http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg030.perseus-engl:8.558>.
- Plutarch and John Dryden. *Plutarch's lives : in five volumes. Translated from the Greek, by several hands. To which is prefix'd the life of Plutarch.* printed for Jacob Tonson London, 1716.
- Kurt A. Raaflaub. Democracy, oligarchy, and the concept of the "free citizen" in late fifth-century Athens. *Political Theory*, 11(4):517–544, 1983. ISSN 00905917. URL <http://www.jstor.org/stable/191448>.
- Adrian van Baarland , Sir Roger L'Èstrange. *Fabulae*. R. Sare, T. Sawbridge, B. Took, M. Gillyflower, A. & J. Churchil, and J. Hindmarsh, 1692. URL <http://name.umd.umich.edu/A26505.0001.001>.

Reuters Staff. Britain says russian troll factory is spreading disinformation on social media, April 2022. URL <https://www.reuters.com/article/us-ukraine\crisis-britain\trolls>.

Xenophon. *Constitution of the Athenians*. Oxford Classical Texts, Marchant, E. C. edition, 1920. URL <http://data.perseus.org/citations/urn:cts:greekLit:tlg0032.tlg015.perseus-engl:1>.

Waiyee Yip. Crazy love: Behind China's crack-down on k-pop and other fan clubs, September 2021. URL <https://www.bbc.com/news/world-asia-china-58459318>.

Y., Chen, Q., Bassett, D. S., Stein, J. L., & Meyer-Lindenberg, A. Zink, C. F., Tong. Know your place: neural processing of social hierarchy in humans. *Neuron*, 58(2):273–283, 2008. URL <https://doi.org/10.1016/j.neuron.2008.01.025>.