

Memory transcription subject: Andes Savulescu-Ruiz, UN universal translator technician.

Date [standardized human time]: October 26, 2136

There were a vanishingly small amount of translator technicians among the human population.

Partially, that was because they were really well-designed, with a thousand different redundancies and failsafes, all enabled through some astonishingly nifty nanite programming. This meant that they very rarely "broke". I have no idea how they managed such adaptive architecture with AI so rudimentary it may as well have come out of the 20th century. But they did. Probably at least a dozen species working together. Translators: biotech at its finest.

That made them difficult to mod and redesign. But it also made me one of maybe two dozen humans alive who knew how to do it, and had the experience to prove it. It was a good feeling, when I submitted my thesis, and I knew for a fact that it would change the world. They blew up my university two days later, but it didn't change that.

So, when I found out about the cattle exchange, I knew. I knew I had the most experience with traumatic brain injuries' effects on the translators, I knew I had "no excuse" with my whole department turned to ash. I knew I turned things in on time, and was reliable, and they liked that.

I knew it was my name on that fucking roster. I knew when the email came from one of those stupid @ interstellar-relations.un.gov accounts.

> Dear Andes Savulescu-Ruiz,

> We would like to inform you that you have been selected to spearhead the human translator implantation and evaluation initiative in the currently-under-construction facility for rescued Venlil. Attached are the details of the position, as well as the relocation requirements.

> Should you choose to accept this opportunity, your compensation...

Sometimes, I love the UN. But holy shit, sometimes I hate the UN.

"What's that?" Olivier asked as I checked my email at the end of Day Nine of my Wandering Around Montreal Spotting Corpses With a Nazi Space Croc adventure.

"Job offer," I said.

He squinted at it, and then at me. "Working with *children*? Are you sure you'd want to do this, my friend?"

"I mean... Maybe? I like children."

He raised an eyebrow at me. "But are you good with them? *Venlil* children?"

"...I mean, I don't know, I've never worked with children before, but..."

"I have heard of another opportunity. I will have my friend send it to you. Much more... Up your alley, I think. And it pays even better."

I nodded and put my pad in my pocket. Olivier was probably right. I dropped out of med school because the responsibility was too much. I couldn't really fathom being in charge of hundreds of children's welfare. Some other job off in a lab somewhere would be better.

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COURT TRANSCRIPT. || SAPIENT COALITION SUPREME COURT
CASE No. 00-00-00-008
OFFICIAL TRANSCRIPT OF PROCEEDINGS - HUMAN EDITION

ABRIDGED: CROSS-EXAMINATION OF DR. ANDES SAVULESCU-RUIZ BY
COUNSELOR THISAVA

ON THE MATTER OF THE SAPIENT COALITION v. JONES ET AL

JUDGE PERIKAR PRESIDING

(JURY TRIAL - DAY FOUR)

Dayside City, Skalga

Human Standard Time: December 11th, 2138

[[an earlier section of this transcript has been removed for accessibility,
[click here](#) for the complete file]]

****THISAVA:**** Hello, Dr. Savulescu-Ruiz, thank you for coming. You were the
Head of Research at the Neurolinguistics Division for the UN's , right?

****DR. ANDES SAVULESCU-RUIZ:**** I um [pause] Yes, I was. It was a very small
division, only myself and a handful of others.

****THISAVA:**** Twelve researchers total, yes?

DR. SAVULESCU-RUIZ: Yes. Well, eleven by the end.

****THISAVA:**** And what did you do in that role?

DR. SAVULESCU-RUIZ: They um [pause] instructed me to create a variety of
tools that could be weaponized against people who have translator implants.

****THISAVA:**** I see. These are weapons that would directly target the brains
of anyone the UN wanted to target, correct?

DR. SAVULESCU-RUIZ: Through their translator implants, provided they
had one, yes.

THISAVA: And you didn't question that?

DR. SAVULESCU-RUIZ: I mean, they wouldn't have hired me otherwise, neurolinguistics isn't exactly useful during a war outside of that context. And—look, I thought they'd want every option available, that doesn't—it doesn't mean anything. Humanity had a massive nuclear arsenal when the satellite wars happened, and used literally none of it.

****THISAVA:**** So you just [pause] *proceeded* to make a weapon that could irreparably damage every translator that came into contact with it?

DR. SAVULESCU-RUIZ: [pause] Yes.

****THISAVA:**** And that's not all, right?

DR. SAVULESCU-RUIZ: Well, no, [chuckle] bricking something is hardly the pinnacle of hacking.

****THISAVA:**** Right. Can you tell the ladies and gentlemen of the jury what, in your professional opinion, is 'the pinnacle' of hacking?

DR. SAVULESCU-RUIZ: Erroneous signalling that is, um, properly directed.

****THISAVA:**** And what does that mean, Doctor Savulescu-Ruiz, when it is done inside a person's brain?

DR. SAVULESCU-RUIZ: I-It can mean a lot of things. That's kind of the crux of the situation. Entire planets full of people with advanced computing devices in their brains, and some of the worst cybersecurity measures to ever see the light of day...

****THISAVA:**** Tell me about the Babel Crash.

DR. SAVULESCU-RUIZ: It was a-a cascading reaction that could be prompted with specific frequencies in a broadcast. In—in terms of weaponization at a large

scale, the um, avenue that General Jones was most interested in was, well, um, maximal negation-confusion. So that's what the final product did.

****THISAVA:**** Not just 'every no means yes, and every yes means no', but a kind of overwhelming randomness of noise entered into every interaction between members of two different species, correct?

DR. SAVULESCU-RUIZ: Yeah, that way they can't [pause] adapt.

****THISAVA:**** And you never once objected? To working on a neurological weapon that targets can't adapt to?

DR. SAVULESCU-RUIZ: [Pause] I mean, again, I-I thought it was a deterrent. I didn't think they'd just spring that sort of attack on several worlds at once. Maybe one fleet, to send a message, you know, a fleet of *combatants*...

****THISAVA:**** But it can affect everyone, right? You didn't design it to only affect combatants.

DR. SAVULESCU-RUIZ: That wasn't an option. That's not how the technology works. No more than bullets that only ever hit combatants is a real [pause] design choice anyone could make.

****THISAVA:**** So you just accepted that that was the situation, and carried on designing?

DR. SAVULESCU-RUIZ: Look, I'm not the one on trial here, okay? I didn't think they'd use it, I certainly didn't think they'd use it *like that*, and I've provided *all of my documentation* to the appropriate authorities. The problem now is the regeneration of enough infrastructure to reverse the changes, not—

****THISAVA:**** —Changes that make it very difficult for people to communicate that they are reversible, right? Changes that might induce psychotic breaks in the subjects?

DR. SAVULESCU-RUIZ: It wasn't supposed to be a *prolonged thing*, it—

****THISAVA:**** Could you have built a timer into it, then?

DR. SAVULESCU-RUIZ: I could have—I did, actually, I built one in, just—

****THISAVA:**** What's the timer?

DR. SAVULESCU-RUIZ: Two years.

****THISAVA:**** Why two years?

DR. SAVULESCU-RUIZ: Well, I [pause] figured if it was used on combatants, you know, they'd just take them as prisoners of war and undo the changes, so it was more a [pause] measure to make sure anyone who slipped through the cracks wasn't...

****THISAVA:**** Dr. Savulescu-Ruiz, do you know how much brain damage two years of linguistic *noise* like that can cause?

DR. SAVULESCU-RUIZ: I didn't think they were going to use it on *tens of billions of civilians*. I—

****THISAVA:**** Please answer the question.

DR. SAVULESCU-RUIZ: Well, [pause] anywhere from outright destroying a person's capacity to be verbal altogether to selective mutism, paranoia, extreme superstition and disabling anxiety disorders.

****THISAVA:**** How many people exposed to the Babel Crash would you say are likely to have suffered such consequences?

DR. SAVULESCU-RUIZ: [Long deep breath] The, um, [pause] the overwhelming majority.

****THISAVA:**** And, even the combatants... Do you know how many of them were, by the UN definition, child soldiers?

DR. SAVULESCU-RUIZ: I believe the floor on that was around six hundred thousand, but the median estimate is in the low double-digits of millions. They haven't normalised all the developmental curves yet.

****THISAVA:**** Would there be a change in the effects, if applied to still-developing brains?

DR. SAVULESCU-RUIZ: Yes, they might, um [pause] adapt better, but... It can also cause more permanent changes.

****THISAVA:**** Was the military leadership informed about how dangerous these weapons could be to a developing brain? The long-term nature of the consequences?

DR. SAVULESCU-RUIZ: Yes.

****THISAVA:**** Of course they were. Dr. Savulescu-Ruiz, can you tell me what Project Sonic was?

DR. SAVULESCU-RUIZ: It was, um—the UN wanted a process to accelerate soldier training. As the translators can be used to, um, *teach*, we designed mods such that they became, ah, systems to enable the acceleration of non-linguistic learning. These mods were then given to a select subset of recruits.

****THISAVA:**** Did Project Sonic have any implications outside of its eventual use in the war?

DR. SAVULESCU-RUIZ: The implications for peacetime are actually *amazing*, they can—well, we know for a fact that polyglottism can create a cushion against neurodegenerative diseases like Alzheimer's, and even Parkinson's, imagine learning a new language in three weeks. Not to mention being able to cut down the time it takes to train for *anything* by sixty to ninety percent, while also making it much more pleasurable to practice. Becoming a virtuoso in your instrument of choice, becoming someone who *enjoys* statistical analysis or engineering problems, all with a few adjustments and the press of a button. Imagine having *one* therapy session, as a *technical consultation*, and not having to worry about intrusive thoughts ever again. Massive psychological burdens lifted off *millions of people* through a smooth, painless process of speed-running cognitive adaptation.

****THISAVA:**** I have a memo from last January in which you called them '*accelerated indoctrination machines*'. Which can, and these are *your words*, 'create a gravity well for ideas'. I'm sorry, I'm a lawyer, not a neurologist—or a physicist for that matter. What exactly did you mean?

DR. SAVULESCU-RUIZ: In the same way translators provide 'meaning', they can provide *tendencies*. People are *drawn* to clusters of ideas because of them. In a society that associates, say, predators with evil, it can reverse that association. Soon enough, the subject just finds predators rather compelling, through—uh—no fault of their own.

****THISAVA:**** According to the investigation, the UN made great use of that technology in interrogations.

DR. SAVULESCU-RUIZ: It did. I didn't—

****THISAVA:**** —What happened to participants in Project Sonic, once the mods were removed?

DR. SAVULESCU-RUIZ: [Pause]Um...

****THISAVA:**** I will remind you, you are under oath.

DR. SAVULESCU-RUIZ: I know, I just... [pause] There was a string of suicides.

****THISAVA:**** And why was that?

DR. SAVULESCU-RUIZ: The current hypothesis is, um, overcorrection. And the participants a-also had engaged in some particularly cruel actions as a function of their newfound comfort with violence, which they [pause] disavowed, when uh...

****THISAVA:**** One of the soldiers' notes reads '*I came to them after the bombing, and they turned me into a monster. I can no longer live with myself. Nothing I do will ever wipe the stain I became on the world.*' Do you believe that is a fair assessment of your technology, Doctor Savulescu-Ruiz?

DR. SAVULESCU-RUIZ: I'm not [pause] really sure what you're asking. I'm not familiar with that particular soldier's case.

****THISAVA:**** Do you think your technology was used to turn humans into 'monsters' during the war?

DR. SAVULESCU-RUIZ: In some cases, definitely. I wasn't privy to those um—I wasn't involved beyond being on the team that designed the technology—

****THISAVA:**** *Being on the team* is putting it lightly, don't you think? You were in charge of the team. You called the shots.

DR. SAVULESCU-RUIZ: The military leaders called the shots, I just figured out how to, um, that is...

****THISAVA:**** Doctor Savulescu-Ruiz, the military leaders have already testified. They told us they had no idea Project Sonic was possible until *you* proposed it.

DR. SAVULESCU-RUIZ: [chuckle] Well, it's not my fault they didn't see the obvious implications of 'semantic translation'. Anything that can prompt an empathetic response in a person—which is what 'sending the meaning of laughter or crying' does—can be redirected towards any affective response. Between that and the existence of text-to-speech and text books—

****THISAVA:**** But you could have kept your mouth shut.

DR. SAVULESCU-RUIZ: [grimace] I thought it was obvious, I didn't—I didn't realize I was proposing a 'new idea' to them.

****THISAVA:**** Would you have? Kept your mouth shut, I mean? If you'd realized.

DR. SAVULESCU-RUIZ: [pause] I don't think that's relevant.

****THISAVA:**** If you thought it could be used to such ill effect—

DR. SAVULESCU-RUIZ: —Lots of things can be used for ill effect, that doesn't—Like I said, I'm not on trial here, I'm a technical witness.

****THISAVA:**** That's true. You haven't had any charges levied against you, right?

DR. SAVULESCU-RUIZ: Of course, because I didn't make the decision, I didn't *authorize*—even when it comes to Project Sonic, I wasn't there for *any* of the implementation, the technicians were there, and the generals and whoever, I—I was in a whole other star system.

****THISAVA:**** Right. Even though you knew the technology best—do you think you could have prevented the 'overcorrection', had you been there?

DR. SAVULESCU-RUIZ: Well, I don't know, I—I gave pretty thorough guidelines.

****THISAVA:**** I have in my possession a communiqué that states the average Sonic Project participant was given a shift in ‘comfort’ with regards to violence of three standard deviations, was that your recommendation?

DR. SAVULESCU-RUIZ: O-of course not—that—I recommended *half of one*. These people were supposed to be screened to already be on the upper half of the distribution, they um—

****THISAVA:**** –So your guidelines were ignored, you could say.

DR. SAVULESCU-RUIZ: Yes, they were—they were not taken as seriously as they should have been.

****THISAVA:**** Do you think they would have been ignored, if you’d been in the room?

DR. SAVULESCU-RUIZ: I don’t think speculating is going to benefit anyone here.

****THISAVA:**** Well, we’re just trying to understand the situation, Doctor. So, the name ‘Project Sonic’. That was your invention, correct?

DR. SAVULESCU-RUIZ: Um [pause]. Well, yes.

****THISAVA:**** Can you tell us what inspired it?

DR. SAVULESCU-RUIZ: I-it was a joke.

****THISAVA:**** A joke?

DR. SAVULESCU-RUIZ: Yes, um... There is a fictional character in human media called Sonic. I believe he was named after the, um, speed of sound. He, uh, he is [pause] known to have to [pause] go fast.

****THISAVA:**** And you thought it fitting, for a project trying to accelerate the rate at which the UN could turn civilians into murderers—

DR. SAVULESCU-RUIZ: —soldiers, they were supposed to be soldiers—

****THISAVA:**** You thought that joke was appropriate?

DR. SAVULESCU-RUIZ: Well, I [pause] suppose so. The atmosphere in the lab was pretty irreverent and we, um [pause] assumed incorrectly that we were mostly making something to frighten the Federation, not [pause] something that would be used on civilians.

****THISAVA:**** How many deaths do you think are attributable to your work, Doctor?

DR. SAVULESCU-RUIZ: Well, uh, that's [pause] a very difficult-to-calculate number. Obviously too many, but—

****THISAVA:**** —But the Sapient Coalition taskforce for post-war analysis did their best, didn't they? They put the death toll at around thirty billion over the next five years.

DR. SAVULESCU-RUIZ: That... Sounds about right for the general hack. Given the average size of a planet and the [pause] extensive nature of the hack. I do think the translator attacks would have a smaller death toll—at least initially—than the um, the medical facilities that were damaged by the destruction of the grid...

****THISAVA:**** Where would you put it?

DR. SAVULESCU-RUIZ: Twenty billion, maybe? Eighteen? Most planets were predominantly their own species, after all. We're also double-counting people who would have died from multiple causes here.

****THISAVA:**** Ah. How do you feel about that?

DR. SAVULESCU-RUIZ: This isn't a therapy session.

****THISAVA:**** But you must have some reaction.

DR. SAVULESCU-RUIZ: Can you please—just—I'm here to answer technical questions, not ethical ones.

****THISAVA:**** Of course. How many children do you think were affected by your weapons?

DR. SAVULESCU-RUIZ: What?

****THISAVA:**** Do you not know?

DR. SAVULESCU-RUIZ: Well, I can—that is... [pause] given the average population of nine billion, and the number of planets [pause] and a standard population pyramid where children are around t-twenty percent of the population [pause] minus two percent, perhaps, for those under t-two years old [pause] I'd say around seven billion or so.

****THISAVA:**** Seven billion children?

DR. SAVULESCU-RUIZ: It depends on how you choose to run the numbers. The um, the brunt of the damage would have been borne by adopted children, children of species-mixed households, children living in orphanages or hospitals or PD facilities. Children with caretakers who are more likely to be of a different species, you know? I'm sure the taskforce has a better estimate.

****THISAVA:**** Their estimate for 'adverse childhood experiences' induced by the Babel Crash is six and a half billion.

DR. SAVULESCU-RUIZ: Sounds about right. [clears throat] Excuse me.

****THISAVA:**** Can you tell me about... Doctor Akatsuki Jefferson?

DR. SAVULESCU-RUIZ: Well, he was, um, [pause] he was very dedicated, diligent, attentive, I'm [pause] honestly still a little confused about why I was put in charge and not him. We had a very similar background, coming from different angles, he was an engineer first, and got into biology later.

****THISAVA:**** Oh, I don't think there are a lot of doubts about why you were chosen over him. Can you tell me what happened, *months* before this technology was deployed, in March of the human calendar, after the reveal of the Archives?

DR. SAVULESCU-RUIZ: He quit.

****THISAVA:**** Was he penalized in any way for quitting?

DR. SAVULESCU-RUIZ: Well, he was under pretty solid surveillance to my knowledge, but no. He even got a severance package.

****THISAVA:**** So quitting was what you humans in the social sciences call a 'live option'?

DR. SAVULESCU-RUIZ: It was.

****THISAVA:**** Why didn't you quit?

DR. SAVULESCU-RUIZ: [No response]

****THISAVA:**** Doctor?

DR. SAVULESCU-RUIZ: I thought the work was interesting.

****THISAVA:**** Ah. Do you think six and a half billion children's lives being damaged by your actions is interesting?

DR. SAVULESCU-RUIZ: [No response]

****THISAVA:**** It's a yes-or-no question, Doctor.

DR. SAVULESCU-RUIZ: Well, *yes, actually*. The logistics of that are very interesting, that doesn't—I didn't *want that to happen*. I never wanted *any* of that to happen, I just—just because—I was—it was *interesting*, and I didn't—it's not like I was making the decision, I would never—these are *generations* of people who have now been permanently changed in ways that will ripple into their society, their technological development, the fucking crime rates that will—their religions—it's—[ragged gasping for breaths, head falls into hands]

****THISAVA:**** You wouldn't pull the trigger, but you would manufacture the gun?

DR. SAVULESCU-RUIZ: I came here to answer technical questions.

****THISAVA:**** Here's a question—what do you think it will take to repair the damage you caused?

DR. SAVULESCU-RUIZ: [pause] I don't know.

****THISAVA:**** Did you feel any guilt about your involvement in the Neurolinguistics Division?

DR. SAVULESCU-RUIZ: Of course I fucking—that's not—this isn't a therapy session, this is a technical—look, I irrevocably damaged dozens of cultures and I never wanted a war to begin with, *is that what you want to hear?* I would have been perfectly happy working in a lab in the middle of nowhere with theories that don't lead to anything for decades. I would have been even happier, being known as the person who *revolutionized education* instead of—of—I—[ragged breaths]

****THISAVA:**** If you never wanted to participate in the war, why did you accept the offer? It says here you had a competing job offer from a rehabilitation facility.

DR. SAVULESCU-RUIZ: [pause] I–uh–I didn’t want to fuck it up. I’m not, uh, good with kids.