

Arkadi and Boris Strugatski - Spontaneous Reflex

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Origin: "Spontanniye refleksi"

Utm got bored.

In general, boredom as a reaction to the tedium and monotony of surroundings or inner dissatisfaction with oneself, and loss of interest in life, are only characteristic of Man and some animals. To be bored one needs to have something to be bored with, so to say, - that is, a delicately and perfectly organized nervous system. One needs the capacity for abstract thought or, at the very least, suffering. Utm had no nervous system in the common sense of the word, and he did not ponder abstract thoughts. What is more, he did not know how to suffer. He only took in his surroundings, memorized and acted. Nevertheless, he got bored.

The thing is, nothing new around him was left to memorize since the Master left. Accumulation of new impressions was the main stimulus governing Utm and triggering his actions. He was possessed by insatiable curiosity, voracious thirst to take in and memorize as much as possible. If there were no unknown facts and phenomenon, they had to be found.

However, Utm's surroundings were familiar to him 'til the last brushstroke and last touch. He remembered this spacious square area with rough gray walls, low ceiling and steel door from the very first moment of his existence. It always smelled of warm steel and insulating fluid. Some barely discernable low humming could be heard from somewhere above - people could not hear him without special equipment, but Utm could hear everything perfectly. The fluorescent lamps below the ceiling were off but Utm could see the room perfectly in infrared light and through the impulses of his sonar.

So Utm got bored and decided to go in search of new sensations. It had been half an hour since Master left. Utm knew through experience that Master would not come back any time soon. This was very important since once when Utm had endeavored to take a little walk around the room without an order, his Master caught him in the act and did something that left Utm incapacitated and unable to move even his sonar arrays. Though it seemed this was not something to be worried about at the moment.

Utm swayed and made a heavy step forward. Cement floor resonated under his thick rubber soles and Utm stopped for a moment to listen. He even stooped. But the range of sounds emitted by the vibrating cement had nothing unfamiliar in it, and Utm again headed for the opposing wall. He came up really close to it and sniffed. The wall smelled of wet concrete and rusting steel. Nothing new here. So Utm turned, scratching the wall with his sharp steel elbow in the process, crossed the room diagonally and stopped in front of the door. It was not self-evident how to open the door and Utm did not immediately figure out how to accomplish that operation. He stretched out his jagged left arm-manipulator, nimbly grabbed the door knob and turned it. The door opened with a long low screech. This was amusing and Utm spent several minutes opening and closing it, iterating between slow and fast, listening and memorizing. Then he crossed over the high doorstep and found himself in front of the stairs. The staircase was narrow, with stone steps, and somewhat high. Utm immediately counted eighteen steps till the first

landing which was lighted. He unhurriedly proceeded upstairs. Another set of stairs, wooden, with ten steps, was leading from the landing, and a wide hall was opening up on the right. Hesitatingly Utm turned right. He did not know why. The hallway was in no way more interesting than the stairs. Perhaps Utm did not like the look of the wooden steps much.

Warmth was coming from the hallway which was brightly lit with infrared light. The light was emitted by the ribbed cylinders hanging low above the floor. Utm had never seen steam heaters and these ribbed cylinders captured his attention. He stooped and grabbed one of them with both pincers. Short sound of ripping metal could be heard, and a thick cloud of hot steam rose up to the ceiling. Boiling water gushed at Utms feet. Utm lifted the cylinder to his head, looked it over carefully, and investigated torn edges of the pipe. Then the cylinder was tossed aside and Utms feet splashed in the puddles. Utm reached the end of the corridor. A red sign lighted above the low door. "Danger! Do not enter without an environment suit!" read Utm. He knew the word "Danger", but he also knew that this word was always applied to people. The word had no relevance for him. He stretched his hand and pushed the door in.

There was a lot new and interesting here. He was standing at the entrance to a vast room filled with metal, stone, and plastic objects. A round concrete construction covered in steel or lead shielding that looked like a flat stand stood in the middle of the room. Numerous cables emerging from it ran along walls covered in marble boards with sparkling gadgets and switches. Copper-wire fencing surrounded this concrete pedestal and shiny jointed rods hung from the ceiling. The rods ended in the same forceps and pincers like the ones Utm had. Silently stepping on the tile floor, Utm approached the copper net and walked around it. Then he stopped and walked around it again. There was no break in the net. Utm lifted one leg and walked through the net without an effort. Torn pieces of copper web clang to his shoulders. Not two steps before the concrete stand he stopped dead in his tracks. His round globe-like head cautiously turned left and right, acoustic receptors moved out and about, sonar antenna quivered. Lead covering on the stand emitted infrared light noticeable even in this warm area. Aside from that though it gave off some ultra-emission. Utm could see pretty well in x- and gamma rays and it looked to him as if the lid was transparent and opened up into an endless narrow well filled with sparkling dust. An order surfaced from the depth of Utms memory: leave immediately. Utm did not know who gave this order and when. Most likely he emerged into this world with the ready knowledge of this, along with many other things. But Utm did not obey the order. Curiosity was stronger. He leaned above the stand, extended his pincers and lifted the lid with some effort.

The flood of gamma rays blinded him. The marble boards blinked with red warning lights, as an alarm went off. For a brief moment he saw the bowels of the concrete abyss through the transparent outlines of his arms, then dropped the lid and exclaimed in a low rasping voice, "Danger! Opasnost! Gefar! Waysan! Abunai!"

A loud echo resonated throughout the room and died away. Utm turned his upper body full hundred and eighty degrees and hurried towards the exit. The shock caused by the radioactive particles in his control circuits was directing him away from the concrete stand. Without a doubt, neither the harshest radiation nor most powerful floods of particles could cause Utm any harm; had he been in the active reactor zone itself he would not suffer any severe consequences. But whoever had created Utm gave him a preference to

keep as far away from sources of strong radiation as possible. Utm came out into the hallway, carefully and meticulously closed the door behind him, stepped over the ribbed steam radiator and found himself once again on the stair landing. There he immediately saw a person hurriedly coming down the wooden steps.

This person was much shorter than Master. They wore loose-fitting light-colored clothing. Their hair was unusually long and of golden color. Utm had never seen such a human before. He sniffed the air and sensed the familiar smell of white lilacs. Master smelled the same exact way, but fainter, sometimes.

The landing was faintly lit while the stairs behind the girl were lit brightly, so she did not see the bulky outline of Utms immense body right away. Catching the sound of his steps she stopped and called crossly, "Who's there? Is that you, Ivashev?"

"Hello, how are you?" Utm replied hoarsely.

The girl shrieked. Glimmering head with protruding glass eyes, abnormally wide armored shoulders, thick jointed arms, were approaching her from the dusk. Utm stepped onto the first wooden stair and the girl shrieked again.

Never before had a Man failed to respond to Utms greeting. However, this strange high-pitched sound, shrill and piercing, definitely unintelligible, did not conform to any of the standard answers known to Utm. Fascinated, he determinedly followed the retreating girl. Wooden steps groaned and creaked beneath him.

"Go back," yelled the girl. Utm stopped and bowed his head a little, listening, "Go back, you monster!"

Utm knew the "go back" command. Following the command he had to turn his upper body around and make several steps in the opposite direction until the "stop" command. However, generally orders came from Master, and besides, Utm wanted to explore. He resumed his ascent until he found himself at the entrance to a small brightly lit room.

"Go back! Back! Back!" yelled the girl.

Utm did not stop any longer, although he was walking slower than he could have. The room captured his attention - two desks, chairs, a drawing board, a bookcase filled with books and stuffed folders. While he was opening drawers and folders and reading aloud notes clearly marked on the sides of the drawings, the girl sneaked out into the adjoining room, hid behind the couch and grabbed the phone. Utm saw this since he had an optical sensor on the back of his head, but he was no longer interested in this little long-haired human. Stepping on the papers scattered on the floor he headed on. Behind him the girl was yelling into the phone:

"Nikolai Petrovich? Nikolai Petrovich, this is me, Galya! Nikolai Petrovich, we are being assaulted by Utm. Your Utm! Utm! U as in Uma, T as in Tim, M as in Mike. Did you hear the siren? Yes! I dont know... I ran upon him when he was leaving the main reactor room... Yes-yes, he was in the reactor room. What? No, I dont think so. They already know at the main controller..."

Utm stopped listening. He went into the hallway and stopped dead in his tracks energetically moving his sonar arrays. Something big, sparkling, and cold was hanging on the opposite wall. It looked like a gray impenetrable square in infrared light, but sparkled and gleamed in daylight, which in itself was not the source of confusion for Utm. Some black monster with moving horns on its round globe-like head was standing inside the square and

Utm could not figure out where it was located. Visual range-finder told him immediately that a distance of twelve meters eighty centimeters separated him from the unknown object; the sonar however contradicted this fact. "There is no object. Instead there is a smooth almost vertical surface at the distance of six meters four centimeters," it said. Utm had never encountered anything like this before, and never before had the sonar and visual range-finder provide him with such contradictory readings. His body had a built-in need to make clear and understand everything he encountered. So he decisively moved ahead noticing and memorizing along the way a certain rule; the distance given by the range-finder was twice the distance given by the sonar. He walked into a mirror. The mirror broke in a ringing shower of fragments and Utm stopped, having come to a wall. Evidently there was nothing more to do here. Utm scratched the whitewall, sniffed, turned around and walked towards the exit crunching on the broken glass and completely disregarding a pallid security guard clinging to the alarm activation switch. Snow and blizzard enveloped him.

Piskunov was already out in the hallway hurriedly putting on his coat when Nikolai Petrovich hung up the phone.

"Where are you off to?" questioned Korolev.

"There, of course--" retorted Piskunov.

"Hold on, we need to decide what is to be done. If that contraption starts fooling around the whole power station--" Petrovich warned.

Ryabkin interrupted, "We should be so lucky if its only the power station? What about the laboratories? The warehouse? What if it decides to pay a visit here, to the village?"

Nikolai Petrovich was thinking frantically. Piskunov was treading in place impatiently, holding onto the door knob.

"We should go there together, all of us," Kostenko offered timidly.

"We'll find it and... well, and grab it!"

Piskunov only frowned to his, and Ryabkin, who was trying to dig out his fur-coat from the coat-rack, exclaimed angrily, "Great idea - to grab it! And what would you have us grab it by? By its pants? It weighs half a ton and has a hit force of about three hundred kilo! What nonsense! You, Kostenko, are new here, so shut up..."

"I know," said Korolev. "Well do the following. I will call the dorms and wake up our interns. Ryabkin, you run to the car park. Ah, damn, everybody is probably out in a club. Well, go anyway and bring at least three drivers. We need to take out our bulldozers. Am I right, Piskunov?"

"Yes-yes, and hurry up. Only..."

"Piskunov, you go to the lab. Find out where Utm is located and call the car park immediately. Kostenko, go with him. Is that clear? Damn, I hope it doesnt get outside the gates!"

They ran outside pushing and shoving and stepping on each others feet. Ryabkin slipped and gave a head-butt into the back of Kostenko, who fell on all fours.

"Damn! Damn it!"

"What, glasses?"

"No, everything is fine..."

Fierce wind was hurling clouds of dry snow above the ground, mournfully whined in electrical cables, and droned heavily in the steel web of

high-voltage cable supports. Bleak yellow rectangles of light were seeping from the cottage windows, and everything else was immersed in total darkness.

"Well, I am off," said Ryabkin. "Be careful friends, don't risk your lives for nothing."

He tripped again and for about a minute struggled in the snow-drift swearing and cursing the vile blizzard, damned Utm, and everything having to do with this incident in general. Finally his fair fur-coat could be seen by the gate and disappeared in the gusts of the whirling snow.

Piskunov and Kostenko were left by themselves.

Kostenko shivered from cold.

"I don't get it," he said. "What do bulldozers have to do with anything?"

"And what would you suggest?" Piskunov inquired.

"Well, I just don't get it... Do you want to destroy Utm?"

Piskunov uttered a short sigh, and continued, "Utm is a unique device, the result of creative efforts of the entire Research Institute of Experimental Cybernetics over the past several years. Do you understand? How can I possibly wish it destroyed?"

He gathered the flaps of his fur coat and staggered on through the snowdrift. Kostenko, mortified and humiliated, followed him. A snow-covered field lay ahead of them and the road beyond it. The power station was on the other side of the road.

To cut through, Piskunov turned off the road and set across the field, which had a foundation pit for a new building dug out in it back in the fall. Kostenko could hear Piskunov muttering something every time he stumbled on the piles of iced over bricks and reinforcing bars. It was difficult to walk. The sparse lights of the institute were barely visible behind the cover of the blizzard.

"Wait," finally said Kostenko. "I say... This is so difficult. Let's rest a while."

Piskunov squatted down beside him. What did happen? He knew Utm better than anybody else in the institute. Every bolt, every electrode, every lens of that magnificent machine went through his hands. He had assumed he could estimate and predict its every movement under any conditions. And now this. Utm at will came out of its cellar and was walking around the power station. Why?

Utms behavior is governed by its "brain"; an incredibly complex and finely crafted device made of germanium-platinum foam and ferrite. While any regular calculating device has tens of thousands of triggers - basic organs receiving, storing, and discharging signals, Utms brain utilizes about eighteen million logical units. These units contain pre-programmed reactions to a multitude of situations, varying conditions, and provide for execution of vast numbers of different operations. What could affect the brain, programming? The radiation of the reactor? No, the reactor is surrounded by a thick barrier of zirconium, gadolinium, and boron steel. Practically, not one neutron, not one gamma-quantum can escape through such defenses. Maybe receptors? No, receptors were in perfect working order earlier this evening. This means the problem is with the brain itself. Programming. Complex new programming. Piskunov himself was in charge of programming and... Program... So that's where the problem lies!

Piskunov got up slowly.

"Spontaneous reflex," he said. "Of course, it's the spontaneous reflex!"

Idiot!"

Kostenko looked at him apprehensively, "I don't get it..."

"But I do! Of course... Who could have thought? Everything was going so well."

"Look!" Kostenko suddenly yelled. He gasped and jumped up. Grey-black sky above the institute lit up by a shaky blue flash, and on this backdrop the silhouettes of black buildings appeared from the snow whirlwind, astonishingly distinct and yet somehow unreal. The line of sparse lights marking the fence of the institute blinked and went off.

"The transformer!" Piskunov said hoarsely. "The substation is right across from the reactor tower. Utm must be there... And the guards..."

"Run!" Kostenko suggested.

They ran. Which was not so easy. Oncoming wind was knocking them down, they were falling into snow-covered ditches, getting up and falling down again.

"Hurry, hurry!" Piskunov urged them on.

Tears from the wind and anxiety were soaking his face, freezing into murky icicles on the eyelashes, and obstructing his vision. He grabbed Kostenko by the hand and was dragging him along, hoarsely mumbling all the while, "Hurry! Hurry!"

Evidently the flash above the institute was spotted in the village. A siren went off on the outskirts, windows of the houses where the guards lived illuminated, and a blind eye of the searchlight ran across the field. From the darkness it snatched snowdrifts, the webbed supports of the high-voltage towers, glided along the stone wall surrounding the institute, and finally rested on the gates. Small black shapes were hastily moving at the gates.

"Who is that... there?" Kostenko asked, wheezing.

"Guards, I guess," Piskunov stopped, wiped his eyes, his voice was breaking off. "They locked... the gates. Well done! That means... Utm is still inside."

Evidently the alarm had already started. Not just one but three searchlights were now exploring the walls of the institute. Snow eddies could be seen dancing in the blue light. Cries were heard through the noise and howling of the wind, someone was cursing. Finally the engines roared to life, the clanking of treads could be heard. Gigantic bulldozers were leaving the car park.

"Kostenko, look," Piskunov uttered. "Watch carefully. We are witnessing the most remarkable chase in the history of humanity. Watch carefully, Kostenko!"

Kostenko glanced at Piskunov sideways. It seemed to him that tears were running down the engineers face. Then again, the tears might have been from the wind. In the meantime the tread clanking was heard to the right of them and not around the back as before. Bulldozers entered on the road. One could already discern their flickering headlights. There were five of them.

"Five against one," whispered Piskunov. "It has no chance. Spontaneous reflex will not help it this time."

And suddenly something changed. Kostenko couldnt immediately figure out what exactly. The blizzard was still howling, clouds of dry snow were still rushing above the ground, bulldozer engines were roaring menacingly and confidently. However, the searchlights were no longer skimming the field. They halted on the gates. The gates were wide open and there was no one near them.

"What the heck?" Kostenko said.

"Could it--" Piskunov did not finish the sentence and they both started running towards the institute. No more than two hundred meters were separating them from the gates when Piskunov, who was ahead, ran into a man with a rifle. The man yelped in fear and vaulted to the side, or at least tried to, but Piskunov grabbed him by the shoulders.

"What is the matter?" he said.

The man was twisting his head topped with a security guard hat back and forth in agitation, cursed, and finally came to his senses.

"It got out," he said. "Got out. Toppled the gates and left. It almost squashed Makeyev. I am off to the village to get some help..."

"Where did it go?"

The security guard hesitatingly pointed left, "There, I think... Along the road..."

"That means it will run into the bulldozers any moment now. Let's go."

What happened next they would remember the rest of their lives. Suddenly something huge and formless loomed at them out of the whirling snow gloom, red and green blinking lights blinded them, and a coarse voice devoid of any modulation uttered, "Hello, how are you?"

"Utm, stop!" Piskunov yelled desperately.

Kostenko saw a security guard run up, and saw Piskunov raise his hands and shake his fists. The gargantuan shape enveloped in steam clouds, this ominous monster, passed him raising its branch-thin legs and disappeared in the blizzard.

Carefully closing the door behind him in his usual manner, Utm made a step forward and stopped. Everything around him was saturated with sounds, movements, emissions. The night was radiating an magical vibrant kaleidoscope of radio waves. A low building with wide windows protected by iron bars stood thirteen and a half meters ahead. Its walls emitted bright infrared light. A low intense humming carried from inside. Millions of snowflakes whirled in the air. They landed on the Utms corrugated sides heated by the reactor, instantaneously melted and evaporated.

Utm turned his head left and right and decided that the nearest interesting object to investigate could only be the low building ahead. He found the entrance right away noticing the walkway on the windward side. The building was surrounded by short fur trees which distracted Utm, who briefly went to investigate one of them. He then opened the door and entered.

Two men sitting around the table in the small narrow room jumped up upon his arrival and stared at him in horror. He closed the door behind him - and even locked it - and stopped before them.

"How are you?" he said.

"Comrade Piskunov?" one of the man asked baffled.

"Comrade Piskunov is out. Can I take a message?" Utm inquired dispassionately.

Utm was not interested in people. His attention was attracted to a small furry being which was pressing itself against the wall in the corner.

"Warm, alive, strong smell, not a Man," Utm decided.

He continued, "Hello, how are you?"

"Grrrrr," the being replied with daring from it's desperation, while bearing sharp white teeth and pressed itself further into the corner.

Utm was fascinated by the dog and completely ignored the fact that the security guards nimbly barricaded themselves behind the table and a closet and began to draw their weapons.

The dog shot past Utm miserably whimpering with its tail between its legs. But Utm was much quicker than the dog. He was more agile than any animal in the world, no matter how swift. His body made a lightning-fast noiseless half-turn, and a long telescoping outstretched hand grabbed the dog across its body. At the same moment a shot sounded: one of the security guards lost his nerve. The bullet glanced off Utms armored back with a clink and stuck in the wall on the rebound. Plaster crumbled.

"Sidorenko, as you were!" the other security guard yelled.

Utm let go off the trembling dog and stared at the two men, both pale but very determined, pointing their guns at him. He sniffed curiously. Unknown smell of smoke-free gunpowder flowed in the air. The dog took cover at the feet of the security guards, but Utm already lost his interest in it. He turned and headed for the next door which was adorned with a picture of skull and bones pierced with a red lightning bolt. The security guards, frozen in amazement, watched his pincer-like fingers manipulate the hemmed drum of the lock. The door opened.

Then both of them came to and dashed after him, "Stop! Back! Not allowed!"

They clung to his armored sides forgetting everything else in the world in horror from the sheer thought what this steel monster could do to the transformer. Utm did not even notice them. All their efforts did not have any effect on him. They could have tried to stop a moving tractor with about as much success. Then one of them pushed his companion aside and discharged the whole magazine at Utms head at close range. The brightly lit hall of the substation rang with the resound of gunshots.

Utm staggered. The ebonite shell of the right acoustics receptor shattered in thousand pieces. Curved sonar array broke off and was hanging limp by the wire. Broken ceiling glass jingled.

Utm had never been attacked before. He had no self-preservation instinct or experience in fighting humans. But Utm could compare facts, make logical conclusions, and choose a line of actions providing maximal level of protection. All these mental calculations took him a split second. The very next moment he turned around and moved towards the men stretching his frightening claws menacingly.

The security guards separated. One ran behind the switch-board, the other vaulted behind the massive steel casing of the nearest transformer hurriedly recharging his gun.

"Sidorenko! Run for the officer on duty, raise an alarm!" he yelled.

But Sidorenko couldnt reach the door no matter what. Utm moved much faster than a person, and as soon as the guard stuck his head out from behind the switch-board Utm would be right in front of him in a second. The men decided to run out simultaneously. They failed as Utm moved from the switch-board to the transformer and back with a speed of an express train.

The switch-board cracked in the middle from Utm's clumsy push, wind swished through the bullet holes in the windows and glass ceiling.

Utm finally got bored of this game and decided to leave the men be. He suddenly stopped in front of the transformer and determinedly plunged his hands under the casing. Security guards took advantage of this and ran headlong for the security station. At the same moment a deafening bang resounded, everything around was lit up by a blinding blue flash, and the

light went off. Sharp smell of burning metal, smoke, hot polish gushed forth out of the room. Stunned and crestfallen security guards did not immediately realize what happened. And then the security station shook from the heavy steps and a harsh voice uttered in the darkness, "Hello, how are you?"

The lock clicked. The door opened with a creak, for a second the heavy outline of the steel monster took shape in the gloomy gap, and the door closed again.

Utm walked through the institute grounds getting stuck in snow and lifting his legs high. The institute was immersed in darkness, and in this darkness even Utm's infrared vision was of little help. He could only discern a feeble glow from his abdomen and legs, on which snowflakes melted and evaporated. Several faint glowing figures dashed between buildings. Utm paid them no attention. He walked figuring out his bearing by the readings of the sonar even though one of the sonar arrays was shattered by a bullet and it was impossible to tell the distance correctly.

Utm became interested in far-off lights of the village, barely visible through the blizzard. Then bright blue beams of searchlights flashed there. He reached a wall, hesitated, and turned left. He knew well that all walls have doors. And soon he reached the gates. The gates were big metal ones. Tense voices could be heard behind them, as bright blue light oozed through a gap.

"Hello," Utm said and brought his whole weight to bear on the gate.

The gates did not budge. They were firmly locked. Metal clanging could be heard from somewhere far. There, behind the gates, something very interesting was happening. Utm pressed harder, moved away, threw back his head, and with a running start, hit the gates with his armored chest. The voices behind the gates ceased, then somebody yelled hesitantly, "Back! Hey, watch it, don't shoot this fiend."

"Hello, how are you?" Utm said, while he took a running start and hit again. The gates fell. The lock turned out to be sturdier than the hinges fastened to the concrete wall, and the gates fell flat upon snow-covered ground. Utm walked on it, passed the fleeing security guards and plunged into the storm raging in the open field.

Utm tentatively maintained balance, walking on the broken ground covered by a shifting sea of dry snow. A void opened under him and he fell. Snow sizzled beneath him. He had never fallen before, but in the very next moment he dug his hands into the ground, stretched them fully and tucked his legs.

Having risen Utm stood looking around. Cottage lights shimmered ahead. Nearby, to his left, three human figures loomed, and further on trucks roared in a line towards the gates. Utm turned left. He greeted the three people as he passed them and immediately recognized one of them to be Master. Master could disable his movements. Utm knew this very well and he hurried along. Master disappeared in the whirlwind of snow behind.

Utm came out on a flat leveled area. Bright lights illuminated him from head to toe. Unwieldy steel monsters moved towards him bearing heavy plows in front of them and stopped, as they hissed angrily.

Utm stood five steps from the first bulldozer turning his round head left and right and kept repeating, "Hello, how are you?"

Nikolai Petrovich Korolev jumped down from the bulldozer. The driver yelled anxiously, "Where are you going, comrade engineer?"

At this moment Piskunov appeared on the road. Ruffled, with tousled hair having lost his hat somewhere on the field, and hands deeply thrust in

pockets of his unbuttoned fur coat. He walked around the bulldozer and stopped in front of Utm. No more than five steps were separating them. Utm towered above the engineer, his corrugated sides sparkled in the headlights, his abdomen shrouded in steam glistened from moisture. The round head with big glass eyes and protruding ears of receptors and sonar arrays, looked like some horrible and comical mask made of a pumpkin like those used by guys to scare girls out in the country. The head swayed at regular intervals, eyes followed Piskunovs every movement.

"Utm," Piskunov said loudly.

The head froze in place, jointed arms glued to the sides.

"Utm, hear my command!"

Utm responded, "I am ready."

Someone let out a nervous laugh. Piskunov stepped forward and put his gloved hand on Utms chest. His fingers hurriedly slid along the armor feeling for the vital part - the switch connecting the computational-analytical part of Utms brain with the power and movement system. And something unexpected happened, unforeseen by everyone but Piskunov, who was most afraid it might happen. Evidently Utms memory retained the correlation of this Masters gesture with sudden inability to move. No sooner had Piskunovs fingers touched the switch had Utm sharply turned. His armored hand swiftly went above Piskunovs head who barely had time to duck, and Utm casually went back along the road. Nikolai Petrovich was the first one to come to his senses.

"Hey, guys!" He shouted. "Position the bulldozers on his left and right! Cut off his access to the gates... Piskunov! Hey, Piskunov!"

But Piskunov wasn't listening. While the bulldozers were spreading out on both sides of the road plunging into snow clouds, he ran after Utm.

"Utm, stop!" he shouted in his high failing voice. "Stop, you beast! Back! Back!"

He choked. Utm was walking faster and the distance between them gradually increased. Finally Piskunov stopped, thrust his hands into his pockets, pulled his head in and just watched Utm. Nikolai Petrovich and Ryabkin ran up to him. Kostenko came last.

"Well, what the heck were you doing?" Korolev said angrily. Piskunov did not answer. "It doesnt respond to commands," he said. "Do you understand, Kolya? Doesnt respond. Clearly its the spontaneous reflex."

Nikolai Petrovich nodded, "I guessed as much."

"No wonder!" Ryabkin exclaimed. "You could have let the train cars choose their own time and direction with just as much success."

"What is it, this spontaneous reflex?" Kostenko asked timidly. No one replied.

"Still, regardless, this is wonderful," Nikolai Petrovich blew his nose and shoved his handkerchief in his inside pocket. "It doesnt respond. Wow..."

"Let's go," Piskunov said firmly.

In the meantime the bulldozers grouped in a semi-circle and began to tighten the loop around Utm who was walking along the road in no hurry. One of the bulldozers crawled out onto the road in front of him with its back to the gates, another was catching up from behind, and the remaining three were approaching from the sides - two on the left and one on the right. Utm of course had long noticed he was being surrounded, but evidently disregarded that fact. He continued moving along the road until his chest touched the first bulldozer. He pushed, causing the bulldozer to move a little, as the

driver grabbed the levers with a strained face. Utm moved away and with a running start hit the machine. Steel clanked against steel and under the direct headlights bright sparks could be seen through the whirling snow.

At the same moment the plow of a bulldozer from behind came to Utms back. Utm froze in place. Only his head slowly revolved like a school globe. Two more bulldozers approached from left and right and they cut off his last paths for escape. Utm was fenced in.

"Comrade engineers! Comrade Piskunov! What do we do next?" the driver of the first bulldozer yelled.

"Comrade Piskunov is not here, can I take a message?" said Utm.

He swung back his arm and hit the plow. Then again and again. He was hitting rhythmically like a boxer in training with a clang, slightly leaning away at each hit, as clusters of sparks flew from under his bat-like arms. Piskunov hurried towards him, accompanied by Nikolai Petrovich, Ryabkin, and Kostenko.

"We have to do something quick or it'll damage itself," Ryabkin said anxiously.

Without warning, Piskunov started climbing the bulldozer tread, but Ryabkin grabbed him and pulled him back down.

"What's the matter?" Piskunov asked with annoyance.

Ryabkin said, "You are the only person who knows Utm in all the smallest details. If it smacks you--this thing can stretch into several months. Somebody else should go."

"Exactly," Nikolai Petrovich said hastily. "I'll go."

One of the workmen surrounding the engineers interrupted, "Maybe you should choose one of us? We are younger, more agile..."

"It will be me," Kostenko said glumly.

"This will never do," Nikolai Petrovich said. "Don't let Piskunov go."

He threw off his fur coat and started climbing on top of the bulldozer. Then Piskunov tried to break off from Ryabkin's grasp.

"Ryabkin, let me go."

Ryabkin did not reply. Kostenko came up to Piskunov from the other side and took him firmly by the shoulders.

In the meantime Utm raged with fury. The lower part of his body was firmly clamped between the bulldozers, but the upper part could move freely. He turned from side to side with a lightning speed, hitting the plows with the full swing of his steel fists. Steam wisps were swirling over him in the snow gloom. "Hit force three hundred kilos," Kostenko recalled.

Nikolai Petrovich sat hunched over at Utms feet with his teeth clenched and waited for the right moment. His ears were aching from the clanking and roar. He knew that Utm noticed him - from time to time the glass eyes turned toward him shimmering watchfully.

"Shhh, calm down," Nikolai Petrovich mouthed. "Utm, dear, calm down! Calm down, you bastard!"

A new sound began with each hit. Something had cracked - either one of Utms steel arms or the bulldozers plow. There was no more time to waste. Nikolai Petrovich dived under Utms fist and hugged his side. Then once again, Utm surprised everyone. His hands fell. The clanging stopped and one could again hear the howl of the storm over the field and the snorting of bulldozer engines. Nikolai Petrovich, pale and drenched in sweat, stood up and reached for Utms chest with his hand. A sharp click sounded. Green and red lights on Utms shoulders went off.

"Done," Piskunov said and closed his eyes.

People immediately commenced talking in an exaggeratedly loud manner; laughter and jokes could be heard. Drivers helped Nikolai Petrovich to get out from under Utm and escorted him back down on the ground. Piskunov hugged and kissed him.

"And now," he said abruptly, "take it to the Institute, we'll work on it. If need be - a week, a month... We should beat that foolishness out of it and make it what it's supposed to be - Universal Task Machine."

"So what did happen to Utm?" Kostenko asked. "And what is this spontaneous reflex?"

Nikolai Petrovich looked tired and haggard after the sleepless night. He said:

"See, Utm is developed on the grant from the Committee on Interplanetary transport. It is different from any other cybernetic machine, no matter how complex. It's meant for working in conditions that cannot be predicted by any, even the most ingenious, programmer. On Venus, for example. Who knows what conditions exist there? Maybe it's all covered by an ocean. Or desert, maybe. Or jungle. We cannot send people there at the moment - it is too dangerous. Instead we'll send Utms, tens of Utms. But how is one to program them? The problem is that it is impossible to teach a machine to think abstractly using current state of the art AI.

"What do you mean?"

"The machine does not understand the concept of a dog. It understands only the specifics of a particular dog. If it encounters a fourth dog which is not similar to the previous three it has met, then it won't know what to do. Roughly speaking, if Utm is programmed to react in a certain way, when seeing specifically a mutt, then it cannot react in that same way when seeing a greyhound. Trivial example, of course, but I take it you understand what I mean. This is precisely where the main difference between the smartest machine and the most stupid person lies - inability to make use of abstract ideas. Well, Piskunov tried to compensate for this shortcoming by creating a learning system. Utms' brain was given a reflexive chain meant to autonomously fill out empty memory cells. Piskunov reckoned that once saturated with impressions Utm would be able to choose the best course of action for each new situation without human intervention. That is the most refined model of consciousness in the world. However, we got an unanticipated result. Theoretically Piskunov allowed for this, but practically... In a word, the new reflexive arc created tens of secondary reflexes not anticipated by the programmers. Piskunov dubbed them spontaneous reflexes. With their emergence Utm stopped working according to the program and started behaving.

"And what do we do now?"

"We'll take a different path," Nikolai Petrovich stretched and yawned. "We will perfect the analyzing abilities of the brain and the receptor system."

"What about the spontaneous reflex? Isn't anybody interested in that?"

"Huh! Piskunov already thought something up... In a word, Utms will be the first ones on unexplored planets and in the uncharted ocean depths. People won't have to be put at risk... Look, Kostenko, let's go to sleep, huh? Start working here and you will find out everything, you have my word on that!"