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FANTASTIC VOYAGE II -- DESTINATION BRAIN

by lease Asimov

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CHAPTER 1 - NEEDED He who is needed must learn to endure flattery.

-- Dephney Senior

"Pardon me. Do you speak Russian" said the low voice, definitely contraito, in his ear.

Albert Jonas Montison stiffened in his seat. The room was darkened and the computer screen on the platform was displaying its graphics with an invitence that had been lest on himself.

He must have been more than half-addep. These had definitely been a man on his right when he sat down. When had that man changed into a woman? Or rison and been replaced? Meerican channel bis threast and usid. "Did you say something, maiars?" He couldn't make her out chardy in the dam room and the flashing light from the comparer screen obscared rather than revealed. He made out dark hale, ensight, hugging the skiell, covering the ease – no artifice.

She said, "I asked if you spoke Ressian."

"Yes, I do. Why do you want to know?" "Because that would make it easier. My English sometimes fails me. Am you Dr. Morrison? A. J. Morrison? Tru not cartain in this darkness. Forgive me if I have made a mistake."

"I see A. J. Morrison, Do Linear see?" "No, but I know you." Her hand reached out, treaching the sleeve of his jacket lightly. "I need you hadly. Are you literating to this talk." You did not seem to be."

They were both whispering, of coarse

Morrison looked about involutantly. The room was sparsely filled and no one was skring very close. His whisper grew lower just the same. "And if Tun not? What then?" (He was carious - if only out of borndom. The talk had per him to deep.)

She said, "Will you come with me now? I am Natalya Boranova."

"Come with you where, Ms. Boranova?" "To the coffice shop -- so that we may talk. It is terribly important."

That was the way it begins. It data is marter, Morrison doubled alterward, that he had been in ther particular room - that he had not been altert - that he had been impact anongh, the second alter - that he had been impact anongh. She would, after all, have found him whenever he had been and would have seized upon him and would have made him lister. It might not have been quite so easy under other circumstances, but it would all have gone as it did. He was certain.

There would have

He was looking at her in normal light now, and she was loss young than he had thought. Thirty-six? Forty, perhaps?

Dark hair. No gray, Principanced features, Heavy synbores, Storag jave, Pleasant nose, Stardy body, but not fat. Almost as tall as he was, even though she was wearing flat heels. On the whole, a woman who was attractive without being beautiful. The kind of woman, he decided, one could get used to. He sighed, for he was fixing the minor and be or binned? Bins, Shady hair, thinking, Blac oyu, foldel. This fixer, this body, strings, Blacky now, nice units. Bit leged is was a six outile. But no, net a fixe you would want to get not to. Bondh had gettes entitely summed to it in a bit to ver ten years, and his forfieth birthday would be five days past the fifth antiversary of the day his divorce had been made final and official.

The waitness brought the coffee. They had been sitting there, not talking but approxising each other. Morrison finally foil he had to say something.

"No vodka?" he said in an attempt at lightness. She smiled and looked somehow even more Russian when the did so. "No Coca-Cola?"

"If that's an American habit, Coca-Cola is at least cheaper."

"For good mason." Morrison laughed. "Are you this quick in Russian?

"Let us see if I am. Let's talk Re-"We'll sound like a couple of spies."

Her here senerace had been in Russian, So had Merrison's reply. The charge of largency made no difference to bins. He could speak and understand in a couldy as English. That had to be us. If an American valued to be a scientist and here puy with the literature, he had to be able to handle Russian, almost as much as a Russian scientist had to be able to handle English

This woman. Natalva lloranova, for instance, denote her metonce that she was not at home in Enriled, stoke it readily and with only a faint accent. Morrison noticed,

The transmission charge an interactive on a memory of a memory of the second of the se "That's true. I was joking. But in that case, why do you want to speak Russian?"

"This is your country and that gives you a psychological advantage, does it not, Dr. Montison? If we speak my language, it will balance the scales a bit."

Morrison sipped at his coffee. "As you wish "Tell me, Dr. Morrison. Do you know me?"

'No. I have never met you before.'

"And my name? Natalya Boranova? Have you heard of me?"

"Forgive me. If you were in my field, I would have heard of you. Since I have not, I assume you are not in my field. Should I know you?"

Tranght have helped, bet will list it go. Harow you, however. In fact, Lizow a great dual about you. When and where you wen been. Your exhedling. The fact that you are diversed and that you have two daughters that live with your ex-wife. Lizow about your university position and the research you do Morrison shrugged. "None of that would be hard to find out in our computer-ridden society. Should I be flattered or annoyed?"

"Why either?"

"It depends on whether you tell me that I am famous in the Soviet Union, which would be flattering, or that I have been the target of an investigation, which might be annoying."

Thave no intention of being anything but honest with you. I have in-

Morrison said coldly, "What reasons?"

"To begin with, you are a neurophysicist."

Morrison had finished his coffee and had absently signaled for a refill. Bonneya's care was half-empty, but she had areasently lost interest in it.

"There are other neurophysicists," Montson said.

"None like you."

"Clearly you are trying to flatter me. That can only be because you don't know anything about me after all. Not the crucial things."

"That you are not successful? That your methods of brain wave analysis are not generally accepted in the field?"

"But if you know that, then why are you after me?"

in our country who knows your work, and he thinks it is builliant. You have rather jumped into the unknown, he says, and you may be wrong - but if you are, you a "Brilliantly wrong? How is that different from wrong?"

'It is his view that it is impossible to be brilliantly wrong without being not altogether wrong. Even if you are in some ways wrong, much of what you maintain will prove useful -- and you may be entirely right."

"What is the name of this paraeon who has this view of me? I'll mention him with favor in my next paper."

'He is Pyotor Leonovich Shapirov. Do you know him?

Merrien sur back in his chair, He had not expected this, "Now Man?" ho side. "Two met Man?" ho side. Two met

Boraneva looked at him disapprovingly. 'You are not a very serious man. Is everything a joke to you?"

"No. Just me. Tin the joke. I've get something snally great and I can't convince anyone of it. Except Pene -- I've new found out -- and he doesn't count. I can't even get my papers published these days.

"Then come to the Soviet Union. We can use you - and your ideas."

"No no. I'm not emigrating." "Who cald emigrate? If you wish to be an American, be an American. But you have visited the Soviet Union in the past and you can visit it once again and stay a while. Then return to your own country."

"You have crazy ideas and we have crazy ideas. Perhaps yours can help ours."

"What crazy ideas? I mean, yours. I know what mine are."

"It's not something to discuss until I know if you are perhaps willing to help us."

Morrison, will intring back in his chair, was vaguely aware of the buzz about him, of people drinking, earing, taiking -- most of them from the conference, he was usus. He stared at this intense Rassian woman who admitted to crazy ideas and wondered what kind of He stiffened and cried out. "Boranova' I have heard of you. Of course, Pete Sharico mentioned you, You'm-

In his enchement he was speaking English and her hand came down on his, her mills pressing hard against his skin.

He choked it off and she removed her hand, saying, "Sonty. I did not mean to hart yo

He stared at the marks on his hand, one of which, he decided, was coine to be slichtly braised. He said quintly in Russian, "You're the Miniaturizer,"

Boraneya looked at him with an easy calm. "Perhans a little walk and a bench by the siver. The weather is beastillel."

Merrison held his lightly damaged hand in the other. These had been a few, he thought, who had looked in his direction when he had cried out in English, but none seemed to show any interest now. He shook his head. "I think not. I should be attending the conference."

Boranova smiled as though he had arread that the weather was beautiful. "I don't think so. I think you'll find a sust by the river more interestine."

For one flashing moment, Morrison thought her smile might be intended to be subactive. Surely she wasn't implying -

He abandoned the thought almost before he had par it clearly to himself. That sort of thing was pass, even on holosistica: "Beautiful Russian Spy Uses Simuons Body to Dazole Naive American."

To been with, the ware't beautiful and her body ware't sizeness. Nor did the look as though anything of that mattere could possibly be on her mind and he himself, after all, ware't that matter - or even interested. Yet he found himself accompanying her across the campus and toward the river.

They walked dowly -- usamend -- and the talked cherrfully about her husband Nikelai and her use Addwards, who was going to cheed and was, for event strange ranson, innovemi in biology, event though his mother was a thermolynamicia: Want's none, Addward was a dmallid chees player, much to his futher's deopointment, but be showed signs of presises on the violation of the strange ranson, innovemi in biology, event though his mother was a thermolynamicia: Want's none, Addward was a dmallid chees player, much to his futher's deopointment, but be showed signs of presises on the violation of the strange ranson, innovemi in biology, event though his mother was a thermolynamicia:

erion did not lister. He occupied himself, instead, in trying to recall what he had heard about the Sevier interor in miniantrization and what possible connection there might be howeven that and his own work. On pointed to a barch. "This one looks remembly clean."

They us down. Morrison stand over the river, watching, with eyes that did not really absorb it, the line of can filing along the highway on their side and the parallel line on the highway on the other side - while scale, looking like composite, field the river itself.

He remained silent and Bonnova, staring at him thoughtfully, finally said, "You do not find this interesting?"

"Find what interesting?"

"My suggestion that you come to the Soviet Union

"No!" He said it curtly.

She eazed at him steadily. "Somehow we don't think all your ideas have been published. That is why we want you."

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"But why not? Since your American colleagues do not accept your ideas, and since you are depressed over this and an sosking a way out of the dead end at which you have actived, why not come to us?"

"Given your investigations into my life, I am sure you know that my ideas are not accepted, but how can you possibly he sure that I am all that depressed over it?" "Any same man would be depressed. And one has only to talk to you to be certain

Merrison laughed without humor. "What good can I possibly do you in connection with miniaturization? I know less about miniaturization than you do about the brain. Fur less

"Do you accept my ideas?" "It? I am not in your field. I know nothing - or very linfe -- about the nervous system."

"I suppose you simply accept Shapirov's estimate of my ideas." "Yes. And even if I did not - desperate problems may require desperate mendies. What hams, then, if we try year ideas as a remedy? It will certainly leave us to worse off." "So you have my ideas. They have been published."

"Do you know anything at all about miniaturization?"

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"Without examining the matter? You would refuse to believe it as a result of precenceived convictions, as your colleagues refuse to believ

Morrison shock his head. "No thanks. I'd rather not. Even if miniaurization were possible, it is not my field. It would not help me or be of interest to me."

Madvomant he thought. She wanted to miniaturize him, attempt this impossibility on him. - Or attempt the possibility of it on him, which would be infinitely worse.

Morrison took a deep breath and threast his key into the door slit. He full the small click as the key seated itself, then he withdrew it and the door ewang open.

In response the man, smiller, took a small wallet from his inner tacket pocket and let it file oren. He said, "Stemature, hologram, fineerreint, wiccordin,"

"Strictly speaking, you're right, of course. But I thought it best to meet you as discretely as possible. Besides, I presumed on old acquaint

"That's my name, yes. You even pronounced it correctly. Accent on the second syllable. Broad a Subliminal memory, obviously." "No, I don't remember you. The name was on your identification. - Id rather you left: "I would like to talk to you in my official capacity." "Apparently everyone wants to talk to me. What about?" "Your work." te you a neurophy

Morrison sat down at the side of the bed. "Let's get this over with. What do you want to know about my work?"

"You told me all this two years ago. I take it, then, you have made no startling discoveries in the last two years."

"Dr. Boranova?" Morrison, in his confusion, could think of nothing better to do than play the parror. Rodane's face lost none of its pleasanness. Teactly. We know her well. We know half an eve on her whenever she is in the United States."

"Have you mind to study them? If you work with a living human brain, don't you leave yourself open to severe lawsaits or to criminal trial"

"That won't happen again, I assume you. I have no intention of ever being in her vicinity again if I can help it. She's a madwoman."

"We've heard of it," said Rodano easily. "They have a special town in the Units devoted to miniaturization experiments.

He shock his head. This was madness. What could she do to him? She could not carry him off bodily. She could not force him to do swelling he distribution to do What childsh turve was carry mine him?

Wyos reduce a man to the dimensions of a By, then all the mass of a man would be croweded into the volume of a By. You'd end up with a density of something like -" he passed to think - " hundred and fifty thousand times that of platinum."

"Then come and see. If it turns out that minimutantian is impossible, just as you say, then you'll at last have a month in the Soviet Usion as a guest of the Soviet Government, All expenses will be paid. If then's a friend you would like to bring with you, bring betr, no. Or bins

Task, The Monton, I shought that was the Washing about. You cannot really prove your shorts because you cannot ready single serve cells is sufficient detail without damaging them. But what if we make a neuron as large as the Komilla for you - or own larger - or that you can ondy it a melecule.

reison was will shaling when he strod at the door of his hend in room, holding the plastic rectaugle of his kay, houshing hand, and venduring if she knew his none number. She could find one, of coarses, if the ware sufficiently dummined. He looked down the length of the corridor each way, half-straid hou sight see her ranning toward him, face convent, hair Pying, hand

How do you know? What if miniaturization gave you the opportunity to endy neurophysics as you have never readed it before - as no one has ever ended it before? And what if, in doing oo, you might be able to help set? That would be our ends in it?

He was a constraibly plump man, not quite fit, filing the chair from arm to ams. He were a thin servecker jacket and under it was a thirt so white that it seemed to given. He was not yet what one might call hid, but he was clearly on the way and wh

"No, not at all. That was last an accident. You just harrowed to walk out with the lady to that bench. Convenient, but not maily foreseen. If s all right, though. If I haddt had the view from the window, there were others watching By that time Morrison had caught his brank and his mind had escaled itself to the point where he asked the question that should have had price in the conversation. "Who are you, anyway?"

ce in Miami? You were presenting a paper and had a hard time of it \sim

"We can talk about your work. As we did two years ago. - Look, why don't you sit down? It's your room and I won't mally take long. If you want the chair Tin sitting on, Til be glad to give it to you?

"I am told that you use mathematical techniques in your electroencephalographic analyses that are not only unorthodox, but are flat wrong. To be unorthodox is one thing to be wrong is quite another." "The only masses they say I am wrate is that I cannot move that I am right. The only masses I cannot reove that I am right is that I can't study an isolated basis neuron is sufficient detail."

Your being convinced doesn't matter if you can't convince anyone else. But now I have to ask you another casesion. Have you done something in the last two years that has managed to convince the Sevien?"

"Yes. What is this attinude of surnises. Dr. Montison? Haven't you ment an hour or two in conversation with Dr. Bonneva? bu't the the one whom you inst left in a smat hurry?"

"Take my word for it. - Look, nothing of what the and I talked about is secret as far as Tin concerned. What the said I feel five to repeat. She's involved in some miniaturization project."

"To mose!" said Montion functly. "Then's no point in worrying about it. If our government nully doesn't want the Soviet Union to get too far ahead in tachnology, it should encourage this

two years ago. Is there anything to your notion that there's a specific structure in your brain that's specifically responsible for creative thought? Not quite a structure. It's not something you can cut out in the ordinary way. It's a neuronic network, Yee, I think there's something to that. Obviously. The cash is that no one else thinks so because they can't locars it and have no evidence for it."

"No. 1 common backward from results and from my analysis of brain waves and I don't seems to be convincing. My analyses are not -- orthodox." He added bitarits. "Definedoxy in this field has come them novebens. but they won't let me be unrefinedox:

He usid. "You came back runnise, ddn't you? I wanded you --' be noised out the window -- 'sitter on the bands, then out us and come several the band at the double. I was hosine you would come us to your hosel room. I ddn't want to sit up here all day waiting for you."

Meetion looked from the hologram to the smiling face. The hologram was smiling, too. He said, "All right, so you're security, it will doon't give you the right to brack into my private quarters. The available. You could have called me from the lobby or knocked at my door."

"If it is miniamized atoms you are speaking of, then Planck's constant, which is an absolutely fundamental quantity in our Universe, forbids it. Miniamized atoms would be too small to fit into the graininess of the Universe." "And if I told you that Planck's constant was reduced as well, so that a miniametrod man would be encaued in a field in which the graininess of the Universe was incredibly finer than it is under normal condition?"

"Then you end up with one atom in the miniaturized man for every three million in the original. The miniaturized man would not only have the size of a fly but the brainpower of a fly as well."

'Only two things. That the Soviets are known to be investigating it - and that it is improvible. Boranova stared thoughtfully at the river. "Impossible? What if I told you we had accomp "I would as soon believe you if you told me polar bears fly." "Why should I lie to you?" "I point out the fact. I'm not concerned about the motivation." "Why are you so certain miniaturization is impossible?

"Not the same?" Again she stared thoughtfully out over the river. "In what way not the same?" "My colleagues think I'm wrong. My ideas are not theoretically impossible in their opinion -- only wrong."

"But what if the mass were reduced in proportion?"

"And if the atoms are reduced, too?"

"Then I wouldn't believe you."

And at this, Morrison was, for a moment, silent. "Not the same," he mumbled at last.

"While miniatation is impossible?"

Morrison rose, staring at her.

He tarned and strode away rapidly. She called after him. 'Dr. Mortison. Listen to me

'How can you offer me a new way of studying neurophysics?'

"You mean you can reverse miniaturization and make a neuron as large as you with." "No, we can't do that, as yet, but we can make you as small as we wish and that would amount to the same thing, wouldn't it?"

The man sitting in the wicker armchair at the window smiled at him and said, "Come in." Morrison stared at him in astonishment, then twisted his head to look at the room number. "No no. It's your room, all right. Do come in and close the door behind you. Morrison followed orders, staring at the man in silent astonishment.

"You were here in order to watch me from the window?"

"I remember the occasion. I remember the paper. If y you I don't remember." "That's not surprising, perhaps. I met you afterward. I asked you questions, and we actually had a few drinks together."

"You must know Im not Shuir Immunes was not major I minored in economics." "Then what can we talk about? I'm good at Rassian, but you're probably henter. And I know nothing about economics

"Of coarse. Im not mad. I've worked with animals. I have to."

"None. But I'm convinced I'm right just the same.

"You make it sound like the bad old days," mumbled M

Morrison said, "You keep an eye on me, too, it would seem." "But you were with Dr. Boranova. We couldn't help seeing you."

"Are they getting anywhere as far as you know?" "We wonder."

Rodano said nothing.

errison, who had waited

"She's tried to tell me they are, that they've succeeded in producing actual miniate

"I don't consider that old acquaintance. -- Francis Rolano?"

"What old accountance?" 'Two years ago. Don't you re

'The same thing I wanted to ke

lave you located it?"

"The Soviets?"

"No," he said in half a whisper. "Are you insune? Do you think I am insune? Good-bye! Good-bye!"

He made a sweeping gesture of rejection with his right arm and broks into a run across the drive, narrowly dodging the cars. Then he was back into the hotel, puffing, almost dancing with impatience as he waited for the elevator.

The operative work Dence, is attrapting, We have our sygoms in the Soviet Unice, to usy outling of ophicicated opinange equipment both Erhebrid and is pace, jost as they have agends have. It is a project as a basing of pacies is attrapting theory soor. It applying the soviet Unice is there are the two way. Description to the soviet Unice is the

"All right. Granted, we can't do anything crade. I presume we have agents attempting to dig out the details

nent to let him speak, then said, "But that's impossible, I tell you. Scientifically impossible. You must realize that, Or, since your field of expertise is Slavic languages and

"I don't have to, my friend. There are many others who say it is impossible and yet, nevertheless, we wonder. The Soviets are free to olary with miniaterization if they release, but we don't actually want them to have it makes we do also. After all, we don't know to what uses it might be net."

Merrison's lips tightened. 'Total you Thave no secrets to keep, so The selling you that you're right. Lest as you op, the wates me to go to the Seviet Union and help out in their miniaturization project. I wort ask how you know that, but I don't think it's jot as infeguees and don't try to

Rolano walled and Morrison were on. The arev case, I said no. Trefused absolutely, J stood on and left at once - and in a harry. You saw me harry. That's the much. J would have resonable if you had eiven me time to do so. And The resonable it move, as a marry of fact, to you. Not is there are masses for you not

*And vot." will Rokens. 7 dan't thick Dr. Roezensa is mad er a fool, are more than I thick that you are mad or a fool, — Do you know what I wan thicking as I wanthed the two of you in so insent a conversation on the mark bench? It seemed to no that he do you have been that with your theories on memory/vice you could somehow hale that Switch and the transmission of the mark bench? It seemed to no that he do you have been that with your theories on memory/vice you could somehow hale that Switch and the transmission of the mark bench? It seemed to no the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the mark bench? It seemed to no that he want of you have been the transmission of the want of you have been the want of you have been the want of yo

exion with the Russian woman. I am here because

Rodano sighed and usid, "I know you're joking, We can't do that these days. You know that. The Soviet Union would retailate at once in the most ampleasant ways and world opinion would be with them. So let's not wante time with jokes like that "

"Now understand me. Dr. Morrison. Please understand. We would suggest - in fact, we would very much want - to have you go with Dr. Bonanova to the Soviet Union."

ments, we would like to know as much about them as possible.

And Rodano said gently, 'Please, Dr. Morrison, no one doubts your loyalty. Certainly I don't. I'm not here because

"Why?"

Morrison stand at Rodane, face rule, lower lin quivering slightly. He brashed at his hair with his right hand and said. "Why do you want me to go to the Sevier Union?" "Not I, personally. The United States Government wants it."

"You've not Madama Baranawa. She must know a arear deal. Grab her and heat it out of her "

. "For the obvious mason. If the Soviet Union is engaged in minian

fir i E Dunmen

k she might approach you and we feated you we

uade me it is."

Radar darged: 76, tor at all. Then is no darger of mediar war new. Wi any polity to ach other, the Soviet Disin and w. Wi corporate is space. We have a corporative mining station on the moon and fundam of easy inter such other, space self-memory. The make there the good are days. Ba, Doctor, some things durit change entriely, We keep as eyes on our polity comparison, the Soviets, just numbers. Wy start They keep as eyes on our

al of his brown hair was crieply curly. He did not wear glasses, but his eyes were small and had a nearsighted look about them, which might be misleading -- or which perhap

rry atom of their scientific expertise on it. Everythine will be wasted

ration. Their neculiar theories and your neculiar theories might add up to something that is not at all peculiar. Or so I think:

nachine, or antierzwity, or faster-than-light travel, or --" He was

to believe me because why, under any circumstances, would I take any part in a preject that has absolutely no sense to it. Even if I wanted to work assainet my country, which I don't. The ensuth of a to

"Then what do you expect me to do?"

You're different. The usual agent is sent into the Saviet Union or into some region in which the Saviet Union is operating under some cover which might possibly be penetrated. He -- or the -- must insinuate himself into a place where he is not really welcome and caught, which is always unpleasant all around. In your case, though, they're asking for you; they behave as though they need you. They will place you in the very midst of their secret ins

"But they've just asked me to so in these last two hours. How do you know so much about it?" They/ve bean interested in you for quite a while now. One of the massess I made it my business to talk to you two years ago was because they seemed interested in you even at that time and we were wonduring why that should be. So when they made their move, we were ready.

Merrison's fingers drammed on the arms of the chair, his making a shythmic clicking ness. 'Lat me get this straight. This is agree to go with Nandya Bonatova to the Soviet Union, presumably to the region when they are supposedly working on mini-

"You needs't restend," said Rodano comfortably. "Help them if you can, especially if that means you get to know the process better," "All right, help them. And then give you what inform

"Exactly."

. "What if there is no information? What if the whole thing is one gigantic blaff or if they're only kidding themselves? What if they're following some

The will be the We wi

"These are ridicators games the nations are playing," said Monison. "Why don't they cooperate in these mattern? We might as well be in the bad old days."

'So if I go and are eventually in a position to assume you, authorizatively, that the Soviet are diffing a dry hole or that they are indeed making progress of such and such a names, then I will be helping not only the United States, but the world, to remain vigorous and progressivereen including the Soviet Union

Rodano nodded. "That's a good way to look at it." Morrison sail, "I have to give you people credit. You're clever can artists. However, I don't fall for it. I favor cooperation among taxions and I'm not going to play these dangerous twentisth-century games in the rational reserv-free. I told Dr. Bozaeva I wasn't going and I'm telling you I'm not going."

Tunderstand that you are adding no and Tm refusing you. But if it happens that you actually represent the government's views in this, then I am propagate to refuse the government as well."

Morrison sat there, flashed, chin up. His heart was bearing rapidly and he foll heroic. Nothing can make me change my mind, he thought. What can they do? Throw me in jail? What for? They have to have a charge.

He waited for aneer from the other. For a threat,

Rodano memby looked at him with an expression of quiet b "Why do you refuse. Dr. Monison?" he asked. "Have you no feelines of n

"Patriotism, yes. Insanity, no."

"Do you know what they plan to do with me?"

"Tell me."

They intend to miniaturize me and place me in a human body to investigate the neurophysical state of a brain cell from the inside.

"Why should they want you to do that?"

They imply it's to help me with my research, which they claim will also help them, but I certainly don't intend to submit to such an experiment. Rodano scratched lightly at his flatfly hair, put it into a mild disarray, and quickly flattened it again as though anxious not to show too much pink skin.

He said, "You can't possibly be concerned over this. You sell me that miniaturization is flarly impossible - in which case, they can't miniaturize you whatever their intentions or desires.

They'll perform some set of experiment on me. They say they have minimutization, which means they are either lists or mad, and in either case I worth have them playing games with me - either to do them plasaure, or to do you plasaure, or to do the whole American government plasaur

"They're not mad," said Rodano, "and whatever their intentions, they know very well we'd hold them responsible for the well-being of an American citizen

en from any knowledge I may have gained from them. So they armage a small accident. So sony! So sony! And they, of course, will pay reparations to my surrowing family and such back a flag-draped coffin. No, thank you. Tin not the type for a suicide mission Radaes stad. "Two chromotors, "Two chrom

"If you can " internound Morrison

"If we can," agreed Rodano. "We can't promise you miracles. Would you believe us if we did?"

To what you will, this is not a job for me. Tan out that coaragoeses. Tan not planning to become a paren in some crazy chess game, with my life very possibly at stake, just because you - or the government - ask me to "You frighten yourself unnecessarily."

Not as in Flight to its proper rule; it longs on catalians. There's article to surgice glob wheneses Harms: (r) catalians and surgice for the constant dense and surgice for surgice glob wheneses and surgice for the constant dense and surgice for the constant dense is a surgice for the constant dense and surgice for the constant dense is a surgice for the constant dense and surgice for the constant dense is a surgice for the constant dense Rodano sighed, half-shrugged, half-emiled, and rose dowly to his feet. "That's it, then. We can't force you to serve your country if you don't wish to."

e moved toward the door, his fast dragging a little, and then, even with his hand maching for the doorknob, he turned and said, "Still, it upsets me a little. I'm aftaid I was wrong and I have to be wrong." "Wrone? What did you do? Bet someone five backs I'd jump at the chance to eive my life for my country?"

No. 1 though you would jump at the charges to abstraces your cancer. Adver all, you's not getting anywhare a things are you would in the one voy of abstrace jump and the one voy of abstrace jump. New at this you have attraced are spaces. Abstrace jump and the second and to states. Adve jump and the one voy of abstrace jump and the one voy of abstrace jump and the second and the second and the states. Adve jump and the second and the seco "My mobien."

No. Our problem. The same of the game in this good new vorted of ours is unchanological advance: the parentys, the influence, the advities that comes with being able to do what other power cannot. The game is brownen the two chief construmt and their properties allice, we and they, the U.S. and the S.U. For all our circumspect friendable, we still compute. The common site game are as trineers and any distructed counter might conceivably be used by the other side. You are a distri "I understand that you're about to be offensive."

We have your statement that Dr. Boranova invited you to visit the Soviet Union. Did she, really? May she not have invited you to stay in the United States and work for the Soviet Union in roturn for support for your idens?" "I was tight. You are offensive

Th's my lob to be so - if I must. What if The right after all and you would imme at the chance of advancing your canver. Only this is the way you intend to do it - star here and access Soviet menory or backing in return for elving them whatever inf

"That is wrong. You have no evidence suggesting that and you cannot prove it."

The I can support it and so can other. We will then make it our business to know you under constant surveillance. You will not be able to do science. Your revolucional life will be over -- emirely. -- And you can avoid all that, simply by doine as we ask and ensire to the Soviet Union

Merrison's lips tightened and be out, out of a dry denset, "You're threatmaing as in a scredu attempt at Nackanal and I won's capitaline. Til take any chance. My shories on the brain's titaking center as centred and the well wondup be reception do-where you or anyone does

"You can't live on 'someday."

'Then I'll die. I may be a physical coward, but I'm not a moral one. Good-bye. Rodano, with one last look, half-commissenting, left-

And Morrison, shaking in a spaces of fear and hopelessness, felt the spirit of defiance leak away, leaving nothing behind but despair

CHAPTER 2 - TAKEN If asking politely is useless, take

- Derbary Senior

Then I'll die theusht Merriage

He hadr's own bothemed double-lecking the door after Reduce left. He ust in the chair, lost in though, face vacues. The wearing ann sizzed in through the window and he didn't bother to push the contact that would opacify the glass. He simply let is class in. In fact, he found a distant hypotric faccination in watching the door notes charce

He had fled from the Russian woman in fright, but he had stood up to the American agent, stood up with the courage of -- of despat

And despension - misses the courage - was all be first new. What Rolano had uid yea, ahr all, may a third a content of the factor be had user out had restricted. He was points at the academic box office and be lacked the lad of experiences (or, more impostant, the liked of courtance) that would get hima job in the private society, even if the quiet countervaling effort of an effended government would at the interval. He was point at the academic box office and be lacked the lad of experiences (or, more impostant, the liked of counters) that would get hima job in the private society, even if the quiet countervaling effort of an effended government would at the interval. What would he do? Go to Canada?

There was Janvier at McGill University. He had once expressed an interest in Morrison's ideas. Once't Morrison had not tried McGill, since he hadn't channed to leave the country. New his telans were of no accesunt. He might have to.

There was Lazin America, where a dozen universities might welcome a Northerner who could speak Spanish or Portuguese -- at least after a fashion. Morrison's Spanish was poor; his Portuguese was r

What had he to lose? There were no family ties. Even his daraethers were distant now. fading at the oders, somehow, like old rehotorrath. He had no friends to struk of -- at laset none that had survived the disasters of his research.

There was his program, of course, opecially designed by himself. It had been built, in the first place, by a small firm accounting to bio opecifications. Since them he had modified it endiency on his own. Prohaps he doubl parent is, encopy that no sone back he was over likely to no it. He would take it with hims, of courses, whenever he went. He had it with hims now, in his hift inner picket pecket, within which it builged like a Morrison could have the reachases of his own breathine and he realized that he was escasing from the purposelow merry-eo-round of his theorets by falling address over them. How could be interest others in arythine, he theoret binary, when he benef even himself?

He was aware that the sun no longer strack his window and that a gathering reilight encompassed his room. So much the better.

He became conscious of a police burz, It was the room hisphone, he malized, but he dain't budge. Morrison let his eyes remain closed. It was probably this man, this Rodano, calling to make a final try. Let him rin

Sheep closed in and Morrison's head lolled to one side in so uncomfortable a position that he didn't stay adeep lone.

It was perhaps fifteen minutes later that he started awake. The sky was still blue, but the recilight in hi ad darkened and he thought, with some guilt, that he had missed all the papers given in the atternoon. And then, rebelliously, he thought: Good! Why should I wa Rebuillon raw, What was be doine at the convention anyway? In three days be had not heard one more that had instrumed him, nor had he met anyone who could do his sinking causer one bit of nood. What would be do the remaining three days excent to yo a wold the two needs he had not heard one more that had instrumed him, nor had he met anyone who could do his sinking causer one bit of nood.

He was hangey. He hadn't had a proper lanch and it was almost disearctions. The resolution was that be was in no most to car almost in the heart's ploth sestaratar and in loss of a most to pay its inflated prices. The thought of waiting in line for a most of the critics show was even loss appetizing.

That decided everythins. He'd had mouth. He minite as well check out and walk to the train station. (It was not a lose walk and the cost evenine air would networks, help clear the mission out of his mind.) It would take him little more than five minutes to rack: he'd be on his way in tan.

He went about the, task grindy. At least he would save half the host bill and he would get away from a place that, he was convinced, would bring him only missry if he stayed. He was quite right, of course, but no prescient bell in his mind rang to inform him that he had already stayed to

Ahre spacicly checking out at the dock deventuits; Morrison stopped out of the large glass doors of the head, glad to be free, bet still if at cases. He had carefully investigated the bobby to make uses that noither Borzarova nor Redato was in sight and now he looked up and down the lass of taxis and studied the knows of people moving in and or All clear - it seemed. ment, nothing accomplished, and endless trouble ahead. McGill University seemed more attractive every moment -- if he could get in

all clear, except for an angry go

He wrang down the sidewalk in the darkaning evening toward the train station, which was just too far arouy to be in sight. He would get home, he calculated, well pust midnight and he would have no chance at all of slopping on the main. He had a book of crossonal puzzles that might occupy him – if the light were good enough. Or – Morrison wheeled around at the sound of his name. He did this automatically, though by rights, under the conditions that prevailed, he should have hurried onward. There was no one here he wanted to speak to.

"All Al Morrison' Good heavenst" The voice was high-pitched and Morrison didn't seconize it.

Nor did he recognize the face. It was round, middle-aged, smooth-shaver, and deconted with steel-framed glasses. The person it belonged to was welldwood.

Merrison at once fift the usual agony of trying to remember a person who clearly remembered him and who behaved as though they were good friends. His month fift open with the effort of riffing through his minifs card cards

The other man summad to be aware of what was working Marrison and is didn's soom to bother him. He said, "You dush remember ms, Tase. No manon you dushil. The Charles Nethers. We not at a Gorden Research Conference - ob, years ago. You went questioning one of the speakers on brain function and did a good job. Very incidence, So it's no wonder I momember year, you use

ber when he had last been at a Gordon Research Conference. About seven years ago, wasn't it? "That's very flattering of you."

We had a lose tak about it that evenine. Dr. Morrison. Turnentber because I was so interessed by you. No reason for you to remember, though. Then's nothing interessive about me. Linn. Lama across your anase on the list of attendes. Your middle name. Anas. benefit you for it had you room about had a hour areas but then you no another that a hour areas but then you are a so to the new of the list.

on's suitcase for the first time and said in obvious diemay, "Are you leaving?"

Norbert seemed to be aware of Morris

"Actually. Instruine to catch a train. Sorry."

"Please give me a few minutes. I've been reading about your -- notions."

We don't expect of fland answers. We simply ware you to work toward it. - Linen, whatever your salary is now, we'll double it. You just tell us your present figure and we'll go to the small touble of multiplying it by two. Fair enough? And you'll be your own bose

Merrison streets back a little. Even extrement in his ideas was not enough at the moment. Beides, the other's after share locion was street and invaded his personal strace, as did the man himself. Nothins the other said broath back are memory of him.

- Morrison said, "I'm sony, but if you've been reading about my notions, you're probably the only one. I hope you don't mind, but --"
- "But I do mind." Norbert's face grow serious. "It strikes me the field isn't properly appreciative of yos

"That fact struck me a long time ago. Mr. Norbert."

'Call me Charlie. We were on a fire long are. - You don't have to go unappreciated, you know?" "There's no compulsion about it. I just am and that's it. Well -- " Morrison turned as if to leave.

fir: #Domestalinat/allering Pr

'Tra afraid I haven't gotten that far.'

"Wait, Al. What if I told you I could get you a new job with people who are sympathetic to your way of thinking?" Merrison was entrached by the "Does this new comments want me?"

Morrison named again. "I would say you were dreamine." "Tm not. Al, linen to me -- boy, am I glad I bumped into you -makes you to someon. Look, win maring a new company, Ganeta Manulacs. We've got kee of menny baland on ad big plans. The tech is to improve de panet in episoting, We've ben improving compares every you, so why no or presend compare are will? Hu upped his forshand areandy. "When it hal! His him is the care than I use you will our of the host. You know, you have a despend on equipartic and you we have a source of the host."

"Of course it wants you. We want to change the mind, make it more imeligent, more creative. But what is it we change in order to accomplish that? You can tell us."

Re / F[Dromerst-Dinal Collectory Princes S204846.Dedarphanes S264000 Princes 5300 page 5308-531.5300 minuter 5308 advan Morrison frowned. "This is the first time I've over met Santa Claus in a business suit. Smooth-shaven, too. What's the east?"

Norbert waved and called out. 'I found him' This is the follow I told you about. Al Morrison, He's the one we need." The trusk door lifted upward as they approached and Charlie Norbest took Morrison's suitcase. 'Here, let me sulead you.' He swung it into the trunk and closed the door "Wait," said Morrison, rather surprised.

. "Don't worry, Al. If you miss this main, there's another. If you want, we'll hire a limousine to take you home -- eventually. Get in." "Into the car?"

"Certainly." The back door had owing open invitingly. "Where will us he solve?"

"Look," said Norbert, his voice dropping half an octave and getting much softer. "Lefs not waste time. Get in."

He let himself be led by the other, hanging back only slightly.

Morrison felt something hard against his side and twisted in order to see what it was He felt it -- whatever it was -- push against him. Nother's voice was a whisper now. 'Let's be very quiet, AL Let's not make a fuss.'

Morrison got into the car and was suddenly very frightened. He knew that Norbert was holding a gan

erion public limits across the back wat, wondering if he could reach the other door and get out again. Even if Norbert had a gan, would be want to use it in a hond parking for with a hundred people within thirty meter? Alter all, even if the gan were element, his sudden collapse would sumly draw atomics The rooshilly vasished each?v. however, when a third man set into the other door, a large one who remand as to best himself into the car and who looked at Moniton. If not malevelently, then curtainly with an excercision that was free of friendblic. Morrison found himself spaceced between a man on either side and was incapable of stirring. The car moved forward smoothly and picked up speed once it moved onto the highway.

Morrison said in a choked voice, "What is this all about? Where are we going? What are you going to do?" Norbert's voice, without the falsetto and without the synthetic bonhomie, was grim. "No need to worry, Dr. Morrison. We have no intention of harming you. We just want you with us." "I was with you back there." (He tried to point "back there," but the man on his right leaned against him and he could not free his right hand to do so.)

"No gag -- Where is he? - Ab, he meved the car to get it out of the line of maffic. -- Look, he's my boss, Craig Levinson. Write not doing you a favor. Al. You'll be doing us a favor. Come with me." Morrison hesitand only momentarily. It's always darket before the dawn. When you're down, there's no discrime but an Lishmine does strike sometimes. - He was suddarly fail of old saws.

A stave middle-ared face looked out from behind the stearing wheel of a han-model astronobile, whose color way something uncertain in the exterine darkness. The face stalls, tooth eleaning whitely, and the voice that belonged to it said. "Great"

"But we want you to be with us - somewhere else." Morrison triad to sound threatening. "See here, you're kidnapping me. That's

"No. Dr. Morrison, let's not call it kidnarmine. Let's call it beine friendly in a rather feecible way." Whatever you call it, this is illegal. Or are you the police? If so, identify yourself and tell me what I've done and what this is all about."

"We are not chareine you with anythine. I told you. We just want you with us. Id advise you to know quiet. Doctor, and remain calm. It will be better for you. 'I carlt remain calm if I don't know what's going on."

"Force vourself," said Norbert uncompathetically

Morrison couldn't think of anything further to say that would help matters and, without actually becoming calm, fell silent.

The stars were out now. The tight was as due as the day hadron. The azomobile moved for oph traffic consisting of a thousand care, each of which had someons balad the wheel who was going quiety about his or her onlaray business wheet any azomness that is a nextly car a crime was being Merrison's heart continued working overtime and his lips membled. He couldn't help but be nervous. They said they mean him no harm, but how far could he must them? So far, everything that this man on his left had told him had been a lis.

He tried to be calm, but to what organ of his body did he speak in order to achieve calmness? He closed his eyes and forced himself to breathe deeply and slowly - and to think microilly. He was a scientist. He had to think microill

These must be Rodane's colleagues. They were taking kins to headquarters, where the pressure to free kins to andertake the noision would be increased. However, they couldn't accould. He was an American and that meant be could be tunned only according to carnin couldible raise, carnin could be increased.

. He draw another deep breath. He menuly had to keep saying no and they would be helpless. There was a small largh and his more flow open

The car had turned off the highway onto a narrow dirt roa Automatically, he said, "Where are we going?"

There was no answer.

The automobile bumped along for a considerable distance and then named into a field, obscure and dark. In the glow of the car's handlights, Morrison made out a helicopter, its retors tuming slowly and its motor making only the slightest par It was one of the new kind, its sound waves suppressed, its smooth surface absorbing, rather than reflecting, radar beams. Its popular name was the "hushicopter."

risen's heart sank. If they were using a hushicopter, which were extremely expensive and quite rare, then he was being transed as no ordinary proy. He was being transed as a big fish. But I'm not a bir fish, he thought desperately.

The automobile stopped and the headlights went out. There was still the faint part and a few dam violet lights, hardly visible, marked the spot where the The larse man at Monison's right threw open the car door and, again with a smart, lowered his head and forced his way out. His larse hand reached in for Morrison.

Morrison tried to shrink away. "Where are you taking me?" The large man solved his upper arm. 'Come out, Encoush talking,

Morrison felt himself half-lifted, half-pelled out of the car. His shoulder hurt as it might be expected to do, considering that it had been nearly yanked out of its socket. But he disregarded the pain. It was the first time he had heard the large man speak. The words were in English, but the accent was thickly Russian.

Morrison felt cold. These were not Americans who had him.

Morrison had entered the hashiconter -- though that is not an accurate description of what took place. To enter implies a voluntary action and he had been much more nearly resched into the volucia.

It had pulsed its way through the darkness as he sat between the same two men between whem he had sat in the car. It was almost as though nothing had changed, although the whisper of the rotors was distinctly more hypotecic than the part of the automobile orgine had been.

After an hour - or resolity low - they came out of the darkness of the air and ddthed downward system the darkness of the ocean. Morison could tell it was the ocean because he could used it, was variety avairs of the for of dreelets in the air, and because he could make out, way distributed on the ocean.

Nor was the dap more than s supporty supplies. He was showed to sup the dad, given time for a barried mode of the date of the

Merrien looked het at his gunte, when his journade ear in the very dim light that flind the phase's instruct. There we cough prom in the phase to that hey year not faced to hem kin is. Not dif they need to do so out of face that he might brank and run for it. Hen, be could brank out only one he deds of the sign. Once the place tool of the phase hold brack control yino the space.

He wondered numbly why they were not taking off and then the door opened to admit another passenger. Despite the diamess, he recognized her at onc

He had met her for the first time only twelve hours before, but how could he have progressed from that first moment of meeting to the passent moment in only twelve hour

Boranova sar down in the sear next to his and said in a low voice, "I am sorry, Dr. Morrison." She was speaking in Rassian.

Morrison stared at Natalya Bonarova, trying to collect his thoughts. Diraly, he folt a desire to say something to her in a surve, imperturbable way, har there was no chance of the

His voice was a creak and even after he cleaned his threat, all he could say was 'Tve been kideapped.'

"That could not be helped, Dr. Morrison. I regret this. I really do. I have my daty, you understand. I had to bring you back by persussion if I could. Otherwise --" She let the last word hang. here he could grade anothy? I am not a schnel. Lum not a dentic. I will be mixed and American institigence is periody arous that we opek and they lacer that you wand are to come to the Soviet Usine. They will know Hare been kidapped - they may have it advanty - and your government will find instit in the middle of a kind of intermational

"But you can't behave in this fashion. This is not the twentieth century." He choked a little in his earnest attempt to stille his same of indignation to the

"I don't know what you're driving at," said Morrison. The planet was arrowing through the night, speeding toward the eastern dawn.

"What concerns American intelligence most right now is our attempt at miniaturization."

"Attempt" Morrison said with a note of sardonic assusement

Saccessful strates - The American due's loss of the B is accessful. They due's loss of the B is accessful accessful

Nateship, very dring our how to conter all this. We are not indiguated. We have as great dual about the American capterineers is antigrarity and it would be maive to this the attribute that we can probe and that the American card; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescenses, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court; that we can have our rescences, but the American court is the Merrison rabbed his eves. Bernova's enist. even voice was making him malize that his collinary bedime was nest and that he was sleeny. He said. "What has this to do with the fact that my country will binerly reset my kiduaneiary?"

Tions to m, Dr. Merison, Tudentand area Why should day? We notify and the day? We notify a the day can be reading to the d

"I don't know how they would reason," said Morrison carefully. "It is no

"But you under to a Financie Rodano after you left me so underly. -- You you, we know even that. Would you care to sull me that he did not surreet that you play alone with us and so to the Seviet Union in order to find our what you might find our?"

"You mean he wants me to play the spy?"

"Doesn't he? Didn't he make that succession?"

Again Montion ignored the question. He said, "And since you are convinced I are to be a spy, you will have me executed after I do whatever it is you want me to do. Jen't that what happens to spire?"

"You've been viewing so many 64 fubilised movies, Dr. Morrism. In the fire place, we will use to ithat you don't find out anything important - mything at all. In the second place, spice are too valuable a commodity to denory. They are useful at tandag units for any spins of our that may be in American hands - or in frontp hands generally. Theleve that the United States takes much the same attinde Morrison said, "To begin with, then, I am not a spy, madame. I am not going to be a spy. I know nothing about American intelligence operations. Also, Tm not going to do anything for you."

"True not at all some about that Dr. Morrison. I think you'll decide to work with ou "

"What do you have in mind? Will you starve me till I agree? Beat me? Keep me in solitary confinement? Pet me in a work camp?"

Benzers freese and dook far head dook far head dook je where seemed to be genetice check. "Budly, Docore, where are been things you argest? Any we back in the days where you we loadly preclaining to the are eff engine and investing herere mode about to? I doo' on yhar we indpit on the summed on the preclaining on the set of engine and investing herere mode about to? I doo' on yhar we indpit on the summed on the preclaining on the set of engine and investing herere mode about to? I doo' on yhar we indpit on the summed on the preclaining on the set of engine and investing herere mode about to? I doo' on yhar we indpit on the summed on the preclaining on the set of engine and investing herere mode about to? I doo' on yhar we indpit on the summed on the set of engine about the set of engine and investing herere mode about to? I doo' on yhar we indpit on the set of engine about the set of engine and investing herere mode about to? I doo' on yhar we indpit on the set of engine about the set of engine abou

"What convinces you?" Morrison asked wearily.

"It' Brave? Lady, lady, what do you know about me?"

"That you have a paceliar viewpoint. That you have upheld is all this time. That you have unched your cancer go downhill. That you have convinced nobody. And that, douple all this, you cling to your view and do not budge from what you are certain is right. It not this the act of a brave mar? Meerican models: "Yes, Yes, it is a kind of bravery. Stift, there are a thousand crackpets in the hierory of science who chang all their lives to some relicators view against topic, against relidence, against their own off-immens. I may be just another one of them

"In that case, you might be wrong, but you would still be brave. Do you think bravery is entirely a matter of physical daring?"

"I know it is not. There are all kinds of bravery and perhaps," he said bimerly, "every one of those kinds of bravery is a mark of insunity or, at any rate, folly.

"Surely you do not consider yourself a coward?" y not? In some ways, I flatter myself by saying that

"But mad in your stubborn views concerning neurophysics?"

"I would not be surprised." "But surply you think your views are correct

"Cartainly, Dr. Boranova. That would be part of my madness, would it not?"

Boranova shook har head. "You are not a serious man. I've said that before. My countryman Shapirov thinks you're right -- or, if not right, at least a genius."

"Next best thing, certainly. Part of his madness, too."

"Shapiny's opinion is very special. "To you. The same - Look, lady. I am timed. I am so experts. I don't know what Tra saving. The net same all this is small. I hope it int't. Let me just - just rest a little."

Merrison let his head how down on his chest. His eves closed. Dimiv, he folt himself method eenfy to one side and a tillow placed under his head

Time passed. A dreamless time

. When he opened his eyes, he was still on the plane. There were no lights, but he knew without any doubt whatever that he was still on the plane

He said, "Dr. Boranova?" She replied instantly, "Yes, Dr. Morrison?

"We're not being pursued?"

'Not at all. Then are several of our own planes flying distant interference, but they have had nothing to do. Come, my friend, we want you and your government wants us to "And you still insist that you have miniaturization? That it is not madness? Or a hoar?"

'You will see for yourself. And you will see what a wonder it is, so that you will want to be part of it. You will demand to be part of it.' "How revealings?" She channel her threat as though the wave termented to sets with discuss. "Have we not encough land? Encough resonance? Have we not our large share of stacs? Are then not more incortant things to do with miniate Morrison straggled to sit upright. He was still woozy, but there was an incipient dawn outside the plane windows and he could see Boranova very direly. He said. "Is that what you wish to do with it, then? Noble scientific endeavors?" "What would your ecoumment do with it if you had it? Try to achieve a sudden military superiority and notice the had old days?" "No. Of course not "So that only you are mobile and only we are swrithly ovid? Do you honesely believe that? -- It may be, of course, that if minimatization becomes sufficiently successful, the Soviet Union may achieve a lead in the development of a space-commond society. Think of manporti errison shock his head in the diamess. "Then I certainly won't help you. Why should you expect me to? I won't fastern Soviet thought on the Universe. I prefer American thought and tradition." 'You think you do and I don't blame you for it. But we will persuade you. You will see.' 'You wonit." Bozanova said, 'My dear thiend Albert -- if I may call you that. I have said that we will be admired for our progress. Do you think you will be immune? -- But let us leave such discussions for another time." She pointed out the plane window at the gray sea beneath, which was just becoming visible. We are now over the Mudicersana," due unit, "and some we will be over the Black Sea and then across the Volge to Muleikignal – Standbrow, in English, dh" – and the war will have from whom we land. That will be symbolic. A new day. Now light, J parkits you will be coper to holy no combined in the sample of the "Without your forcing me to stay?" "We will fly you home freely if you ask us to - once you have helped us." "I won't help you." "You will." "And I demand now that I be returned." "Now doesn't count," said Boranova cheerfally And they flew the last several hundred kilometers to Malenkierad. CHAPTER 3 - MALENKIGRAD A pawn is the most important piece on the chessboard -- to a pawn. -- Dephaey Senior Prancis Rodano was at his office early the next momine, which was Monday and the besimine of the week. That he had worked on Sunday was common encough not to surveise him. That he had deet at all darine the night just comolected did When he arrived, half an hour before the official start of the day, Ionathan Windrep was already there. That did not surprise Rodano Wathrep walked into Rodano's office within two misures of the latter's arrival. He leaned against the walk, the palms of his large hands bagging his ofhows, his left log crossing his right, so that the too of his left shoe was digging into the capter. "You look wom-out, Frank," he said, his eyebrows hunching low over his dark eyes. Rolano looked up it the other's check of course gray heir, which notatively depicted him of any claim of hic own to opender of appearance, and sail. "Hed wors-set, but Fusc hoping it didn's show." Rolano was very sense of having goes through the mentiog's stands theorem by and carefully and of having drawed with 'It shows, though. Your face is the mirror of your soul. Some agent in the field you'd have made." Rodano said, "We're not all made for the field Tiknow. And we're not all made for deek work, either." Winthrep rabbed his bailbors nose as though he were antions to file it down to normal size. "I take it yes're werried about your scientist, what's his name?" "His mame is Albert Jonas Morrison," said Rodano wearly. There was this presence at the Department of not knowing Morrison's name, as though everyone was anxious to emphasize that the project was "Okay. I have no objection to your mentioning his name. I take it you're worried about him." 'Yes, I'm worried about him, along with a lot of other things. I wish I could see things more clearly. "Who doen?" Worknop or down "Look, there's no new vorying. You've handled this from the start, and I've been willing to let you do so because you're a good man. The perfectly satisfied you've done all you could to make this work because one thing about you is that you understand the Resektion Rolano winced. "Don't call them that, You've been watching too many twentisth-century movies. They'ne not all Rossians, any more than write all Angle-Sanons. They're Soviets. If you wate to understand them, by to understand how they think of themselves. "Sure. Anything you say. Have you figured out what's so important about your scientist? "Nothing, as far as I know. No one takes him seriously encept the Soviets." "Do you think the Sov 1. For this, To use, but Pharen's any antion of what they see is Meridea. It sets the Socies, either a stable of antiphysics and the set is Meridea and the set is Meridea. It is a stable of antiphysics and the set is Meridea and the set is Meridea and the set is Meridea and the set is Meridea. It is method by a stable of antiphysics and the set is Meridea and the s "Ah? And how do you know that, Finnk? "Partly from contacts inside the Soviet Union. "Path." "Good agent." "At it too long. Needs to be replaced." 'I don't know. Let's not retire a winner "In any case," said Rodano, unwilling to fight the point, "there was a sudden multiplication of interest in Morrison, on whom I'd been keeping tabs for a couple of years "This Shapirov. I suppose, had another brainstorm about Morrison and persuaded the Rass-- Soviets they needed him." , "Perhaps, but the famey thing is that Shapirov seems to have dropped out of the news recently." "Out of favor?" "No sign of that." 'Could be, Funk. If he's been feeding the Soviets a line of garbage about miniamization and they've caught on to it, I wouldn't want to be in his shore. These may be the good new days, but the Soviets have never learned to have a sense of humor about being made to look or field foolis "It could be that he's gone underground because the miniaturization project is heating up. And that could also explain the sudden desperation about Morrison." "What does he know about miniaturization? "Only that he's same it's impossible." "It makes no sense, does it?" Rodane said carefully. That's why we let him be taken. There's always the hope it will shake up the pieces and that they may then come together in a new way that will begin to make sense. Winthrop looked at his worth. The should be there by new. Malenkigrad. What a name! No news of any plane crash last night anywhere in the world, so I guess he's there." "Yes -- and just the senses nerven to send two, encert he was the one that the Seniar second " "Why is he wrong? Is he shaky ideologically?" To doubt that has an indexings. He's areas will have sight Yue been thinking that it's all a minimize. He lacks gene and he's not very height, encopy in an academic sense. I dou't think he can possibly think on his feet - if he over has to. He's not going to be start enough to find our anything. I suspect hell be in our loss nning to end and I've been thinking for hours now that we'll never see him again. They'll imprison him -- or kill him -- and I've sent hi "That's just middle-of-the-eight blass, Frank. No manner how damb he is, he'll be ables to till as whether he warched a demonstration of minimarization, for instance, or what it was they did to blan. He doesn't have to be a drewed observer. He need only still us what happened and we will do the necessary thinking." 'But, Jon, we may never see him again. Windrey Juscel Isis hand on Rochary's doubler. "Don't begin by assuming dauner. III see that Addy gen the work I. Wemphy descret and I's unit the Rochary's doubler. They are a chocycly being to proceed when the time comes. Dart make yarreaff sick over it. N's moves is a complex game and I's indexed work, it doesn't work. There are a thousand other moves on the boast." Merrison fol harvard. He had door through much of Mondar. Isolate it would rid him of the wore of his in Lie. He had same examplify of the food that had been breached in toward evenine, had razzken oven more examplify of a shower. Freeh clothies we steven him that fit rather indifferently - hew what of that? Add he had seven Mondar airbat alemanativ descine and razdine. The mem in theoret of 1, the mere convinced is we further to be back to be a start of the start What, then, would be the point in domanding to be taken to the nearest American consul or in making wild threats of American retaliation? Of course, he could see why this had been done. It was as Rodano had explained. The American government wanted information and he was in an ideal position to get it for them. Ident? In what way? The Stretes would not be fools enough to let him get any information they ddn't want him to have and if they thought that the information he managed to get (or condult') avoid getting) was too much, they would not be fools enough to let him get The more he thought of that, the more he folt that, dead or allyo. he would never see the United States arain and that the American imeliarence community would there its collective theulders and write it all off as an unavoidable miss - nothine eained but, then arain, nothine much lost. Metricon assessed himself - Albert Jonas Metricon, Ph.D., assistant professor of neurophysics, originator of a theory of theorgin that remained annecesptal and alb tot ignored; failed fasher, failed fasher, failed sciencis, and now failed pawn. Nothing much lost. In the death of the nints, in a hand room is a source he dida's even know the location of in a aution that for over a contract half were did to a source he dida's building were set or a fulfield half building were the source of the manifestime that no one should hink hink were mean-face for even waster server over. And yet - and here a small quark of pide managed to surface - the Sevien had varance him. They had gone to considentify roothis to get him. When permation had failed, hey had not holisend to use faces. They could'd to positly how been censin-thar the Ushad States would studies/posite the new permation had related, hey had not beinted to use faces. They could'd to positly how been censin-thar the Ushad States would studies/posite the new permatice had related to positive had related to positive the new permatice had related to po And they were going to considerable trade to be low going to considerable trade to be added by the host added, but they need to a going a going to considerable trade to be added by the second added by the s Boy hope yould this last? Boy though they might be under the improvision than last (honey of thought was correct, Materian biand all to the attention biand a the stands to be add pathened was circumstantial and surbhy indifect — and that so one had bon able to continue his nor surface findings. What would happen if the Society from the inter (in, concellance continue his material and surphyse) and the stands to continue his nor surface findings. Boranova had said Shapirov had thought highly of Montson's suggestions, but Shapirov was a notorious wild man who changed his mind daily. And if Shapiov shrugged and samed away, what would the Soview do? If their American topby were of no use to them, would they mean him contemposed to the United States (one more hamiliation, is a way) or hidd their own folly in taking him, by imprivating him indefinitely - or worse. In fact, it had been some Soviet functionary, some specific person, who must have decided to kidnap him and rick an incident and if the whole thing turned soar, what would that functionary do to sow his own neck - undoubtably at the exponse of Montson'd By drawn on Teenday, when Meerican had been in the Soviet Union for a full day, be had convinced himself that every path into the fanare, every alternative roune that could possibly be taken, would end in disaster for him. He wasched the day break, bet his spirite remained in deeper night There was a brusque knock at his door at N a.m. He opened it a crack and the soldier on the other side pashed it open farther, as though to indicate who it was who controlled the door. The soldier said, more leady than necessary, "Madame Rozanova will be here in half an hour to take you to breakfast. Be ready." While he decord harrisely and made use of an electric more of rather ancient design by American standards, he wondered why on Earth he had been fairely associabed at hearing the soldier quote of Madame Benzova. The acchaic "contrade" had long passed out of a It made him feel invitable and foolish, too, since of what value was it to brood over tiny things in the midet of the vast morass in which he found himself? -- Except that that was what people did, he knew. Boranova was ten minutes late. She knocked more gently than the soldier had and when the entered said, "How do you feel, Dr. Mortison?" "I feel kidnapped," he said stiffly. de from that. Have you had enough sleep? "I may have, I can't uill. Frankly, madame. I'm in no mood to tell. What do you want of me?" At the moment, noting by to take you to breakfust. And please, Dr. Merrison, do believe that I are as much under compution as you are. I assum you that I would rather, at this moment, be with my little Addeaude. Have neglected him outly in morent months and Nakita is not pleased at my descence, other. But when he matried ms, be know I had a crosse, as Tak "As far as I'm concerned, you are free to send me back to my own country and stend all your time with Aleksandr and Nikolai." "Ab, if that could be so -- but it cannot. So come, lat us go to bunkfust. We could out here, but you would feel imprisoned. Let us out in the dining noon and you will feel better." "Will I? Those two soldiers outside will follow us, won't they?" Regulations, Dr. Morrison. This is a high-security zone. They must guard you until someone in charge is convised that it is safe not to guard you - and it would be difficult to convise than of that. It is their job not to be convised 'Til bet,' said Morrison, shragging himself into the jacket they had given him, which was rather tight under the ampin. "They will in no way interfers with us, however," 'But if I suddenly break away or even j manthorized direction. I assume they will shoot me dead." No. that would be bad for them. You are valuable alive, not dead. They would nerves you and, eventually, solar you. - But then, I'm sure you understand that you must do nothing that would be uselessly totablesome. Morrison frowned, making little effort to hide his anger. "When do I get my own baggage back? My own clothes?" "In time. The first order of business is to eat." The dining room, which they reached by an elevator and a rather long walk along a dese tidor, was not very large. It contained a doe Boranova and Morrison were alone at their table and no one offered to join them. The two soldiers were at a table near the door and though they each are enough for two, they faced Morrison and their of There was no menu. Food was simply brought to them and Morrison found he had no quartel over the quantity. There were hard-builed eggs, builed potators, cabbage scop, and castar, along with thick dices of dark bread. They were not given out in indivibut were placed in the center of the table where each persor Penhaps, thought Merrison, they bring enough food to find six and, since we two are the only ones here, we should only consume a third. And after a while, he had to admit that with a full sumach he foit a little mollified. He said, 'Madame Bonneva "Why not call me Natalya, Dr. Meerison? We are very informal here and we will be colleagues for perhaps an extended period of time. The repeated 'madamee' will give me a headsche. My friende even call me Natasha, It could come to that

She smiled, but Morrison felt subbornly indisensed to be incrutioned. He said, "Madame, when I feel friendly, I will certainly act friendly, but as a victim and an involutance ressonce here. I renfer a certain formality,"

Branese sights 3be birds a stable chask of bread and deved monthly. Thes, evaluating, doo side, Tat it he as you wink, but plass spars are the 'sudamate.' Let us have up protosional title - and I doo't many 'sudamini.' Too many syllable. - But I memping you.'

"De Bornsova," said Merrison. more cold/w than before. "You haven't sold me what it is you want of me. You morelined minimatization, but you know and I know that that is introvollik. I think that you worke of it memby to midead area and to midead area and to midead area." need to thay sumes. Tell me why I am multy here. After all, eventually you must, since you apparently expect me to be of some use to you and I carly be that if I am left completely insorant of what it is that

Boranova shook her head. "You are a hard man to convince, Dr. Morrison. I have been trathful with you from the start. The project is one of minianarization." "I cannot believe that."

"Why, then, are you in the city of Malenkierad?"

"Small city? Littlenown? Tinyburg?" said Morrison, feeling a pleasure in hearing his own voice sound the phrases in English. "Fethaps because it is a small city."

*At Dave had periodic occusion to say, Dr. Montinen, you are not a serieux max. Sell, you will not be in doubt long. There are a few people you should meet. One of them should, in fact, be hern by now." She looked around with an annoyed frown. "So where is he?"

Morrison said, "I notice that no one approaches us. Every once in a while, the people at the other tables look at me, but then they look away if they catch my eys."

"They have been warned," uid Bozzarva absendy. "We will not waste your time with insternancies and almost everyons here is an insternancy as far as you are concerned. But some are not. Where is he?" She rose. "Dr. Morrison, excess me. I must find him. I will not be gone long."

The it safe to leave me ${\mathcal T}$ said Morrison surflowically. The soldiers will remain, Dr. Morrison. Please do not give them cause to react. Intellect is not their fore and they are trained to follow orders without the painful necessity of thinking, so they might easily hast yes."

"Don't worry. I'll be careful."

. She loft, moving hurriedly out the door after exchanging a few words with the soldiers as she passed.

Morrison watched her go, then glanced over the dising room moreously. Having found nothing of interest, he bent his eyes upon his clasped hands on the table and then stated at the still-sizable portions of unconsumed food before him. "An you all through, comrade?"

Morrison looked up sharply. He had decided "comrade" was an archaism, hadn't he?

- A woman was standing, looking at him, with one halled fits on her hip in a negligent manner. She was a ransonably plamp woman in a white uniform, slightly stained. Her hair was reddel-brown, as won her systemy, which arched "Who are you" asked Morrison, frowning,

'My name? Valeri Paleron. My function? Hardworking serving woman, but Soviet citizen and member of the party. I brought you this food. Didn't you notice me? Am I beneath your notice, perhaps?' Morrison cleared his threat. "I'm sorry, miss. I have other things on my mind. - But you had bener leave the food. Someone else is supposed to be coming here, I think."

"Ah! And the Tearina? She will be back, too, I suppose?"

"The Tsurina"

You don't think we have Turkes any longer in the Soviet Union? Think again, commute. This Romova, the grandingher of peasance and a long line of peasance, consider herealf quite a lady. I'm sure." She made a sound with her lips like a long 'p-b-b-h,'' ndulent with contempt and a touch of hereing Morrison shrugged. 'I do not know her very well

"You are an American, aren't you?"

Morrison said sharply, "Why do you say that?"

"Because of the way you meak Rassian. With that accent, what would you be? The son of Tear Nicholas the Tyrant?"

"What's wrong with the way I speak Russian?"

Th clashes as though you learned it in school. You can hear an American a kilometer aroay as soon as he says, 'A glass of vodica, please.' He is not as had as an Englishman, of course. Him you can hear two kilometer "Well, then, I'm an American."

"And you'll be going home someday

"I certainly hope so."

The serving woman no Morrison nodded. "Why not?"

ad quietly, pulled out a rag, and wiped the table thoughtfully. 'I would like to visit the United States someday.'

"I need a parsport." "Of course."

"And how does a simple, loyal serving woman get one?"

'I suppose you must apply for one."

"Apply? If I go to a functionary and I say, 'I, Valeri Paleron, wish to visit the United States,' he will say, 'Why?"

"And why do you want to go

"To see the county. The people. The wealth. I am curious how they live. -- That would not be reason enough."

"Say something else," said Morrison. "Say you want to write a book about the United States as a lesson to Soviet youth

"Do you know how many books --"

She stiffened and began to wipe the table again, suddenly absorbed in he

Morrison looked up. Boranova was standing there, her eyes hard and angry. She uttered a harsh monoryliable that Morrison didn't recognize but that he could have event was an epithet and not a very polite one, either

The serving woman flushed duily. Boranova made a small governe with her hand and the woman turned and left.

Morrison noticed that a man stool behind Boranova -- shore, thick-socked, with narrowed eyes, large care, and a broad-shouldened, muscular body. His hair was black, longer than usual for a Rassian, and it was in wild discarey, as though the clusched at it a great deal

Boranova made no move to introduce him. She said, "Was that woman talking to you?"

"Yes," said Morrison.

"She recornized you to be an American?" 'She said my accent made it obvious

"And she said she wants to visit the United States?"

"Yes, she did."

"What did you say? Did you offer to help her go there?"

"I advised her to apply for a passport if she wanted to go."

"Nothing more?"

"Nothing more."

Bonneys said with discontent, "You must pay no attention to her. She is an ignorant and uncultured woman. -- Let me introduce to you my friend, Arkady Visuarionovich Duzhney. This is Dr. Albert Jonas Morrison, Arkady: Derhnev managed a clamsy how and said, "I have heard of you, Dr. Montson. Academician Shapirov has spoken of you often."

Morrison said coldly, "I am flattered. -- But tell me, Dr. Boranova, if that serving woman annoys you so much, it should be an easy task to have her replaced

Denhney laughed harshly. "Not a chance, Comrade American -- which I expect is what she called you --*

"Not actually."

Then she would have somer or lass; had we not interrupted you. That woman, I suspect, may be an intilligence operator and is one of those who keeps a close eye on us. "But why --?"

"Because with an operation like this, no one can be transf entirely. When you Americans are engaged in breakflowigh science, are you not kept under close observation?"

Tdon't know," said Morrison stiffy. These never been engaged is any breakthrough science that my government has been in the least interested is. - But what I was going to ask is, why does that woman act as the does if the is as imuligence agent?"

'To be a provocateur, obviously. To say outrageous things and to see what she can trip someone else into saying."

Morrison podded, "Well, it's your worry, not mine." "As you say," said Dezhnev. He turned to Boranova. "Natasha, have you told him yet?"

"Please Arkady-"

"Now come, Natasha. As my father used to say, "If you must pull a tooth, it is mintaken kindness to pull it slowly." Let's uil him."

Three told him we're involved in miniaturization

The dust at T will be does, pilled bis char sea to the of Monton, and Januard toward bin. Morrison, with the presental quare invaded, anomatically withdres. Bothere canse closer off and oid, "Contrade American, ory field Ninkshis is aromatics and do is convinced thar you will you the blogs for field No. Socie is using, "You will avaid be doed by some than you were presented and using to the second contract thar you will you will be presented and a second to a second to

"Arkady, you are being boorish," snapped Boranova.

"No. Nazada, Lan beine honest -- which is constitutes the same thine. Dr. Morrison -- or Albert to avoid formality, which I hant'-- he shuddened dramatically -- 'since you won't be nerounded and since we have no since. you will do what we want by force, as you were broasth hant by force." Boranova said, "Arkady, you promised you wouldn't --"

"I do not care. Have thought since I promised and I have decided that the American must know what he faces. It will be easier for us -- and it will be easier for him. too."

Morrison looked from one to another and his throat tightened so that it grow difficult to breathe. Whatever it was they planned for him, he knew he would be given no choice

14. Morrison continued to be silent while Dezhney, unconcerned, proceeded to eat his own breakfast with relish.

. The dining room had more or loss emptiad out and the serving woman, Valeti Paleron, was carrying off the remains and was wiping down the chairs and tables.

Dezhnev caught her eye, beckoned to her, and indicated that the table was to be cleared.

Morrison said, "So I have no choice. No choice in what?"

"Hah! Has Natasha not even told you that?" replied Dezhnev.

he told me on several o casions that I was to be involved in mi ion problems. But I know -- and you know -- that there is no minimutation problem encept that of trying to turn an impossibility into fact -- and I centainly can't help you in that. What I want to know is what you really have for me to do.

Dezhnev looked amused. "Why do you think miniaturization is impossible?"

"Because it is."

"Then I say show me?"

Derhney tamed to Boranova, who draw a deep breath and nodded.

Durhney rose. He said, "Come. We will take you to the Grotto."

rrison bit his lip in vecation. Small frastrations loomed large. 'I do not know that Russian word

Bornnova said. "We have an understooned laboratory here. We call it the Grotto. It is one of our rostic words, not used in ordinary conversation. The Grotto is the size of our miniatarization project."

"The Grome," said Boranova, "is located inside that. It gives us all the rooms we want, frees us from the vagaries of weather, and is impersentible from aerial surveillance, even from spy sandlines."

Durhary said from his sear at the controls, "And Fluid touble doing so. Once again Fluid to speak to the Control Coordinating Committee - may what is left of their gray hairs full out. As my further used to say, "Aper were invented because politicians were needed." How it is possible to it two thousand kilometers array and make policy -

Oncide as a i-to revealed from. Morebook Ninked, adjusture his vess to the wallelet. He revealed the is controls, P. Ladord the elaboration of American models and warned little more than a side with scall-warned warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican model warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican model and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican models and warned little more than a side with a scall-warner mathematican model.

"Vacuamed?" asked Monison, coughing also.

fir i E Donner

"Relieve it You will have the demonstration Dechaes arranged "

Morrison fult the disconflort in full when they passed an air-jet moving in the other direction and was insundaned in the day Boraneya looked amused. She courbed and said. "Do not be concerned. We will be vacuumed soon."

"Yes. Not so much for us, for we can live with a little day, but the Grotto must be reasonably day-free." "So must my langs. Wouldn't it be better to have these air-jets enclosed?"

They private in experiment or more constant and periods of an and with such a straight face, you might almost trick me into believing it."

The air-jet glided smoothly forward to the rather sharp ending of the town and to the broad, low rocky massif that suddenly loomed before them

When they are tood as Malekaland. Meetion discovered that it was a small town in fact, as well as in name. These was rooved blocks - what we call a dark been balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for the was the stress and the stress. Althouse balls for these who weeked on the mosic - what were it was that the mosical with the fair call or minimum call and the stress. Althouse balls for the was the stress and the stress. Althouse balls for the was the stress and The little craft, riding on the jets of air publics gaption the ground, blow up a small cloud of date, which was, for the most pare, left behind as they progressed smoothly forward. Monissis could see that it was not comfortable for the podestrians they passed who, one and all, took evasive actions as it approached.

They premie us dependent of nore shakeness models and pulses senaled by by vill active. Manochic, this is a servers and it is built in the outpress, where the distances is nell. That has its advantages - and its disadvantages, nor. The setting pure vegetables, as you use, and they have some animale, nos, but large-cale agic/nhummest vait setting the community is larger and here are inspirated functions. The nove, it denois haven are instandential to a setting pure vegetables, as you use, and they have some animale, nos, but large-cale agic/nhummest vait setting the community is larger and there are inspirated functions. The nove, it denois haven are instandential to a setting pure vegetables, as you use, and they have some animale, nos, but large-cale agic/nhummest vait setting the community is larger and there are inspirated functions. The nove, it denois haven are instandential to a setting pure vegetables, as you use, and they have some animale, nos, but large-cale agic/nhummest vait setting the community, it larger and there are inspirated functions.

"Spy suellies as illegi," aid Monteen indignantly. "It is menty illegi to call them op suellies," she back Benhev. The air-in banda a it made a turn hen landed in the shadow of a socky cleft in the body of the smooth

"All out," said Dephney.

CHAPTER 4 - GROTTO Small can be beautiful: An eagle may at times go hangry; a pet canary, never. -- Deathney Senior In a large and well-lit washroom, Boranova and Derhnev began to remove their outer clothing. Morrison, alarmed at the prospect, bestand Bonances smiled. You may keep your inderclothing on, Dr. Morrison. Just toos everything else, except your shoes, into that bit. I presume them is nothing in your pockets. Place your shoes at the base of the bit. By the time we laws, it will all be cleaned and ready for our. Merrison did as he was told, trying not to observe that Borazova had a most opulant figure, concerning which the seemed totally unaware. Amazing, he thought, what clothes will obscure when not designed to reveal. They were washing now, with lavish application of exap - faces to the same and arms to the efforts - them breaking companyly at their hair. Again Morrison bestured and Braneses, reading his mind, sail. "The breakes are closed after each ose, Dr. Morrison. To day's know what you may have mad of us, but some of es un Morrison said, "All this just to go into the Geotto? Do you go through this every time?" "Dorry time. That's why no one goes in just bindly. And even when staying within, there are frequent ablations. - You may find the next step anglescant, Dr. Morrison. Close your eyes, take a deep breach, and held it if you can. It will take about a minute." Morrison followed orders and found himself stanest's buffeted by a weighter wind. He suscende drankenty and collided with one of the Nine. He hold on fields's. Then, as suddenly as it staned, it was ever, He opened his eyes. Durhney and Boraneya looked as though they had put on fright wigs. He fift his own hair and knew he must look the same. He reached for his brush "Don't bother," said Boranova, "There's more we'll have to go through." "What was that all about?" said Morrison. He found he had to clear his throat twice before he could speak. "I mentioned that we'd have the dust vacuamed away from us, but that's only the first stage of the cleaning process. -- Through this door, please." She held it open for him Morrison emerged into a narrow but well-lit corridor, the walls glowing photoluminescently. He lifted his eyebrows. "Very nice." orything to be kerosene lamps." He checkled and added, 'I admit we haven't caught up with you in ev "Saves energy," Durhaey said, "and that's very in a you referring to the technological advancement? Americans seem to come to the Soviet Un You stills back without withing to be enack? said Monrison. "That is a sure sim of an unclear conscience. If you were analyzed technology. I could noise out that it would be very sizele to new the avenue onior from Muleskiand to the Gento and to use closed air-ies. We would need less of thic." Dethers's face darkened, but Bornaves par in sharply, "Dr. Morrison is quite right, Adady. I don't like your fueling flat it is not possible to be hones without being rads. If you cannot be both hones and poline, keep your tengue on your own side of your sents." Durbary reined unsails. "What have I said? Of course the American doctor is right, but is then are thinks we can do when doctors are made in Moscow by ideos who saw small bits of money without counting the consequence? As my sail failer used to say. The trouble with economizate is that is can be very consentions in that is can be very consentions. "That's true enough," sold Boranova. "We could use a great deal of money, Dr. Morrison, by spending on a better read and better air-jere, but it is not always easy to persuade those who hold the parse strings. Samily you have the same trouble in America." She was motioning even as the talked and Morrison followed her into a small chamber. As the door closed behind them, Derhnev held our a bracelet to Morrison. "Let me tie this around your dight wrist. When we held up our arms, you held up yours." Morrison felt his weight lighten momentatily as the chamber floor dropped. "An elevator," he said. "Clever guess," said Deahney. Then he clapped a hand to his month and said in a muffled tone, "But I mustrit be rade." They stopped smoothly and the elevator door opened. "Identification!" came a percentfory voice. Durhney and Boraneya nelsed their bands, at which Morrison did as well. Under the purplish light that suddanly suffused the elevator, the three bracelets glintered in parterns which were not, Morrison They were school down mother corridor and into a mean which was both warm and down "We will have to have a final scrubdown, Dr. Montson," said Boranova. "We are accessomed to this and stripping is musine for us. It is easier - and timesaving - to do it as a group." 'If you can stand it," said Morrison grimly, 'I can.' "It is unimportant," said Deabney. "None of us are strangers to the sight." Denhavy scrambled out of his underclothes, supped over to a portion of the wall where a small red knob was glowing, and placed his right themb immediately above it. A t unel in the wall slid open and revealed white garments hanging flaccidly to one side. He placed his underclothes at the bottom He werned utterly unabashed about being mode. His chest and shoulders were dark with hair and there was a long-baseled scar on his right buttock. Morrison wendered idly how that might have come about Bonnova did the same as Dorbney had dons and said, "Pick a light that is on, Dr. Morrison. It will open to your thambpitta and then, when you touch it agains, it will close. After that it will open only to your thambpitta, so please nber your locker number and you won't have to pro-Morrison did as he was told. Boranova said, "If you need to use the backroom first, you can go ther "Im all right," said Montson, With that, the room was aswirl with a damp mist of water droplets. "Close your eves," called out Borneysa, but it was unnecessary for her to say so. The initial stine of the water forced his even closed at once. There was soap in the water or, at any rate, something that strang his eyes, tasted biner in his mouth, and irritated his nosrills "Lift your arms," called out Durhney. "You needs) circle. It comes from all directions. Morrison lifted his arms. He knew it came from all directions. It came from the floor, too, as he could tell by the dishtly uncomfortable reasoure on his scroture. "How long does this last?" he gasped. "Too long," said Dezhnev, "but it is necessary. Merrison contrast to himself. At the court of 58, it weened to him that the hitterness on his lays caused. He squared his oyee, Yee, the other two were still them. He count and when he mached 126, the water stopped and he was builted in uncounterably het and dry air. He was partine by the time that storged too and he realized he had been holdine his branch. "What was all that for?" he said, looking away uncomfortably at the sight of Boranova's large but firm breasts and finding little comfort in Dezhnev's hairy chest. "We are dry," said Boranova. "Let's get drossed. Merrien was eager but was almost immediately disappointed by the names of the white clockes in the locker. They consisted of a biosex and parts of light comon, the parts held by a coef. Then was also a light cap to cover the hair and light seadals. These the the owner opaque, it seemed to Merrison that little or nothing was truly left to the image He said, "Is this all we wear?" "Yes," said Bonnova. We work in a clean, quiet environment at own temperature and, with thereaves; clother, we can't expect much in the way of fabition or expanse. Indeed, barring a certain understandable relacuace, we could easily work in the made. But enough -- come. d now at last they supped into what Memioan mcognized at once as the main body of the Gronto. It emetched away before him -- between and beyond omate pillars to a distance be couldn't make out Be could accentise none of the existence at Base could be 'Be use existed a 'be used or financial of the used of the send of existence at bia collegement by the used of the send of existence at bia collegement of the used There were people everywhere in the Gromo. There were a dozen nearby and others farther off and the impression was of the innerice of a human art hill crawling with machinery, with humanity, with purpose No one paid any attention to the newconsers or to each other. They went about their work in silence, their steps multiled by their sandals. Again Boranova seemed to read Montion's mind and when she spoke it was in a whisper. "We keep our council here. None of us knows more than it is good for him -- or her -- to know. There must be no insks of significance." 'But surely they mus "When they must, they will - minimally. It reduces the pleasure of camaraderie, but it is necessary "This kind of compartmentalization dows progress," said Montson. "It's the price we pay for security," said Boranova, "so if no one talks to you, it is not a personal matter. They will have no mason to talk to you, 'They'll be caries Three seen to it that they know you are an outside expert. That is all they need to know. Morrison frowned. "How can they expect an American to be an outside expert?" "They don't know you're an American." "My accent will give me away at once as it did to the sarving woman." "But you will not talk to anyone, encept for those to whom I will introduce you." "As you wish." said Morrison indifferently. He was still looking around. Since he was here, he might as well learn what he could, even if it should num out to be trivial. When - if - he memod to the United Same, he would samely be aded for every detail he had observed and he might as well have concerling to give the He said in Bonneys's ear. "This must be an expensive place. What fraction of the national budget is expended here?" "It's expensive," said Boranova, admitting nothing further, "and the government labors to limit the expense." Durbney said work. Thad to work for an hoar this momine to persuade them to allow a small additional coveriment for your benefit -- may the Committee catch the cholers." Morrison said, "The cholera no longer exists, even in India." "May it he minutated for the Committee " Boranova said, "Arkady, if these supposedly humorous expressions of yours get back to the Committee, it will do you no good." 'Tm not altraid of those pigs, Natasha "I am. What will happen to next year's budget if you infuriate them? rison said, with sadden impatience, but speaking even more softly, "What concerns me is neither the Committee nor the budget, but the simple question of what it is I am doing here." Durhney said, "You are here to wimess a miniaturization and to be given an explanation of why we need your help. Will that satisfy you, Comrade Am-- Comrade Outside Expert?" Morrison followed the other two to something that looked like a small old-fashioned train carriage on very merow-gauge trac Boranova placed her thumb on a smooth patch and a door slid open smoothly and without noise. "Please get in, Dr. Montison." Morrison held back. "Where are we going?" "To the miniaturization chamber, of course "By milroad? How big is this place "It is large, Doctor, but not so large, This is a matter of security. Only certain individuals can use this device and only by usine it can one penetrate into the cost of the Gonto." "We live in a controlst world, Dr. Morrison. Our neede are tractworldy, but we do not wide to subject large numbers to tractations they need not face. And if someone neurados one of to to no - elsewhere, as we have nervaded too, it is safe if their knowledge is limited, you see. -- Please set in." Merrison entered the compact vehicle with some difficulty. Donknet followed kins with equal weakle, using: "Another example of sensitives cheese paring. Why so small? Biccases the bouncemes qual killions of rables on a project and they fort viscous if they save a for has n odd places at the cost of making hardworking people i Beamers are into the front wat. Morrison could not see how the manipulated the controls or, for that mater. If there were controls to manipulate. It was resulted to be a controls. The cariase bera to move suddenly and Morrison fully the distributive and in the resulted. There was a small vindow at eye level on either eide, but not of clear glass. Moreion could use a small section of the coven smalely in a straty, wavy, poorly factored manner. Agronntly, the vindows were not means for vision, but were memby intended to reduce what might observice be an unacceptably tight enclosure to those with channer. It seemed to Mattion that the individuals be could make out forcupit the glass paid to attention to the moving cartiage. Devyoon have, be thought, is well-tained. To show any interest in any procedure with which you have nothing directly to do most appaaratly be a sign of discoursey - or verse. It seemed to Morrison that they were approaching the wall of the cavera and the carriage, with another small link, slowed. A section of the wall slid aside and the carriage, with yet another series, nicked up speed and moved through the opening. It grow dark almost at once and the dim light in the carriage's coiling did little more than change night to dask. They were in a narrow tand into which the cattiese fe with accurately life room to stars, excess on the left side where Montion, rescript read Dethers, thought he could make out another mir of rails. There must be a fauet two such cartises, he thought, with room to must one another in the tanal if both were in overarian. The named was as danly its as the carridge and it was not straight. Either it had been carved through the bill in such a way as to billy blace of last moismace in order to save money or it was carved delaburatly in some day, arrivit: surch for making things more secure by making them none complicated. The darkness inside and conside the carridge might serve the "How lone will this take - uh --" asked Morrison. ression. "You don't know how to address me, I see. I do not have an academic title, so why not call me Arkady? Everyone does here and why not? My father always said, What course is the person, not the name Dezhnev looked at him with (in the dimness) an u Morrison notified "Very well likes lone will this take, delends?" "Not long, Albert," said Dezhnev cheerfully -- and Montison, having been lared into first-name informality, could not object to the return. He surprised limited a limite by finding be did not wish to object. Durhney, even with his father's aphotones included, seemed to be uncomplicated, at lease, and, under the circumstances. Moreison welcomed a chance of refusing from the perpendificneing an The carriage could not be moving at a speed faster than a leisurely walk, but them was a small latch each time it took a curve on the track. Apparently, petty economies included leaving the curves unbanked.

He moved forward, the other two following, and a door openal in the billokic Montion dath was how 1 we done. X dath link like a door; rather 3 second as imaged part of the receive all. It popend just as the covers of the Forty Thieves had with the memore of the works? "Open-terror door was a door and the forty Thieves had with the memore of the works?" "Open-terror door was a door and the forty Thieves had with the memore of the works?" "Open-terror door was a door and the forty Thieves had with the memore which the over the had the two to the over a well as the door and the forty Thieves had as a second to the over a second the over the over a second to the over a s

Attributes in a theory is the last support from the Each cons the moon, it had anow bear on the moon, of coares, that he van virtually very one Each-some

Morrison blinked as he supped out. The room they were now in was not as large as the one they had left and there was virtually nothing in it. Then were only the tracks under the carriage that made a vide arc and then led back soward the societs of the wall from which they had emerged. He co

Merrison looked around. There were many doors and the celline was communitively low. Without definite evidence of the fact, he full that he was in a three-dimensional checkerbard, with mannerous small mores on several levels.

Then, with absolutely no warning. Light flooded in and the carriage ground to a stor-

Boranova was waiting for him, seeming to observe his cariosity with a touch of disapproval. "An you ready, Dr. Morrison?" "No, Dr. Boranova," said Morrison. "Since I don't know where I'm going or what I'm doing, I'm not ready. However, if you will lead the way, I will follow:" "That is sufficiently ready. - This way, then. There is comeone else you must meet." They passed through one of the doors and into another small room. This one was very well-lit and had its walls lined with thick cable In the room was a young woman who looked up when they came in, pushing acide something, that seemed, from its appearance, to be some kind of technical report. She was quite porty in a pale and valuerable way. Her flaxm hair was car short but with enough of a ty a tity mole just under the left corner of her month. Her cheekbones were high, her hands thin-fingered and graceful, and her expression did not appear as though she wer Morrison smiled, however. For the first time since his kidnapping, it seemed to him that there might be a lighter side to this domai situation in which he had b "Good day," he said. "It's a pleasure meeting you." He tried to give his Rassian an educated sound and to get rid of what the serving woman had so easily detected as his American accent. The yoang woman made no direct answer but, turning to Boranova, said in a voice that was slightly hasky. 'Is this the American?' "It is " said Bernston, "He is Dr. Albert Innus Meetings, professor of neurophysics," "Assistant professor," said Morrison deprecatorily Boranova ignored the correction. "And this, Dr. Morrison, is Dr. Sophia Kaliinin, who is our electron "She scarcely looks old enough," said Morrison gallantly. The young lady did not seem armoud. She said, "I look, perhaps, younger than I am. I am thirty-one years old." Morrison looked abashed and Boranova cut in quickly, "Come, we are ready to begin. Please check the circuits and set matters in motion. -- And quickly." Kaliinin hurried out. Durbacy looked after her with a erfo. 'The shad the doesn't seem to like Americans. It cars out a handout million potential connections at least. Now if the also dids't like Ressians and would come to realize that I am as Karelo-Fineleb as the is.' "You Kamlo-Finnish?" said Boranova, forced into a smile. "Who would believe that, you madman?" "She would -- if she were in the proper mood." "This would require an impossible mood." Bornevs turned to Morrison. "Prince do not take Sophic's behavior presentily, Dr. Morrison. Many of our citizens pass through an ultraguatoric phase and field it to be very Soviet to didike Americans. It is more pose than mality. Fin sure, once we begin to work together as a sume, that Sophia will be do "I understand completely. Things are similar in my country. As a matter of fact, at the moment, Tunnot very feed of Soviets - and understandably, I think. But - and he united - "I could make an exception for Dr. Kalinin very easily." Boranova shook her head. "American like you or Russian like Arkady, there is a peculiar masculine way of thought that transcends national boundaries and cultural differences." Merrison was unnoved. "Not that I will be working with har -- or with anyone. I have grown fired of telling you, Dr. Bonnova, that I don't accept the existence of miniaturization and that I cannot and will not be of a Dephrey laushed. "You know, one could almost believe Albert. He speaks so seriously." Boranova said, "Observe, Dr. Montison. This is Katinka." She targed a case which Montion, starfed, new observed for the first time. Dr. Kalitais had rather absorbed his atturnion till new and even after the had left he had been id/v keesine his eve on the door through which the had none. waiting for her man He focused on the cage of wire mesh. Katinka was, apparently, a white rabbit of moderate size and placid appearance, who was munching away at greenery with the rapt concentration of her kind. Morrison was aware of the slight scrabbling noise she made and of the rabbit odor, which he must have noted, unconsciously, earlier and ignored. He said, "Yes, I see her. A rabbit." Not just a rabbit, Destor. She is a most musual crutante. Unique, She has made bioxy to a far greater extent than base the catalog of war and disoave that awaily is thought of by that name. If we exclude such parsity incidental crutance as weenes, filese, and subinitroscopic parsities, Katiska is the first Dring constant what has the wledge of the miniaturization of life forms and, as you can see, her experiences have in no way adve Morrison said, "I do not wish to be insuling, but your have statement that the rabbit has been miniatation three times is not really evidence that this has indeed happened. I do not mean to card solub upon your integrity, but, in a case like this, I think you understand that nothing ing the fact is sufficiently considering? "Certainly. And it is for that erason' that - at considerable expense - Katinka will now be miniaturized a fourth time. Sophia Kaliinin swirled back i rrison. "Are you wearing a watch or do you have anything metallic on you?" she asked crisply. Thave no possessions on me at all, Dr. Kallinin. Nothing but the clothes I wear, the single pocket of which is empty. Even this identification bracelet that has been put on me seems to be of plastic." 'It is merely that there is a strong electromagnetic field and metal would interfe Morrison said, "Any physiological effects?" "None. Or at least none have yet been detected." Merrison, who was waiting for them to give up their presents of minimetration and wondering how long they could carry on the fraud (he was growing most canonicon over the namer by the minimi), solid, with just a stack of malica, "Majit not overcepture lead to birth defects should you over groupsate, Die Kalitate Kaliinin flushed. "I have a baby. She is perfectly normal." Were you exposed during pregnancy "Once." Boranova said, "Is the inquisition over, Dr. Morrison? May we begin?" "You still maintain that you will miniaturize the abbit" "Certainly." "Then eo ahead. I'm all eves." (How foolish of them, he thought surdonically. They would soon be claiming, of course, that something had gone wrong, but where would they go from there? What was it all about?) Boraneva said, "To begin with, Dr. Morrison, would you lift the cage?" Morrison made no move to do so. He looked from one to the other of the three Soviets in suspicion and uncertainty. Denheev said, 'Go ahead. It won't hart, Albert. You won't even get your hands dirty and, after all, hands were meant to become dirty at work.' Morrison put his hands on either side of the cage and lifted. It weighed about ten kilognams, he judged. He granted and said, "May I put it down now? "Of course," said Bonanova. "Gently," said Kalijaja, "Do not dietarb Katioka." Morrison lowered is carefully. The rabbit, which had momentarily stopped feeding when the cage was lifted, suffied the air cariously and straned sensatively to its unbarried chewing Braners and bid and Sophia moved to see side of the more where a table of controls ware all be hiddled by the cables. She looked over her should even be though evintuing in position, the valued over to move it slightly. She returned to the controls and cloud a central A whining sound made itself heard and the cage began to gliner and shimmer as though something, all but invisible, had interposed itself between it and themselves. The shimmer extended beneath the cage, separating it from the stone-top table on which it had been reuting. Bozanova said, "The cage is now enclosed in the miniaturization field. Only the objects within the field will be miniaturized." Meetion stared and a little worm of uncertainty began to site within him. Were they going to try some clever illusion on him and make him think he had witnessed miniaturation? He said, "And how exactly did you produce that so-called miniaturation field?" "That," said Boranova, "we do not intend to tell you. I think you understand what classified information is. Go ahead, Sophia." The urbins heightened is nich well intensified assessments from a second is medicated to endow is endow in endow in endow in the locking or them, he had taken his own off the case. Now when he locked us it second to have assessed on how assessed endows in He fewered and bent his hand to as to line up one side of the cape with the vertical line of a cable on the opposite wall. He held his hand study, but the side of the cape shank away from the informac line. There was no missile, the cape with first studied his eyes in frastration. Boranova smiled narrowly. 'It is indeed shrinking, Dr. Morrison. Saroly your eyes tell you so." The white continued -- the shrinking continued. The cage was perhaps half its original linear measurement Morrison said, with obvious lack of conviction, "There are such things as optical illusions Boranova called out. "Sophia, stop the process for a moment." he white lowers into these and the gitter of the minimum terms full dimmed and disk. The cage set on the table is before, a considerably smaller version than it had been. Inside was the rabbit rell - a smaller rabbit, but one that was preportioned in every way as the original had been, manching on smaller lawer, with smaller pieces of carrent distributed across the fine of the cage Boranova said. "Do you honestly think that this is an ortical illusion?" Morrison was silent and Dethney said, "Come, Albert, accept the vidence of your sumes. This experiment consumed considerable energy and if you remain unconvinced, our clever administrators will be annoyed with all of us for wasting money. What do you say, then And Morrison, shaking his head in raeful confusion, said. "I don't know what to say." Boranova said, "Would you lift the cage again, Dr. Morrison?" Anis Motion holized and Recover of -The minimutation field has not left in radiacely or architecture data the task. The teach of your unminimuted had will not affect it, nor will be state of minimutation affect you. You set'' And the radiacely her hand, farly and entry, on too of the case. Merrison's horizons was not poor against that. Grapetty, he placed his hand on either side of the cage and lifed. He exclaimed in surpire, for it could not be mach over a kilogram in mass. The cage turnhol is his gity and the minimum rabbit, alarmed, hopped to one conset of the cage and haddled there is against Morrison put the cage down and, as nearly as he could estimate, did so in its original position, but Kaliinin walked over and made a small adj Boranova said. "What do you think: Dr. Montison?" 'It weighs considerably less. Is there some way you pulled a 'Pulled a switch' You mean replaced the larger object with a smaller while you were watching, the smaller exactly like the larger in everything but size. Dr. Morrison, please.' Morrison cleared his threat and didn't press the point. It lacked plausibility even to himself. Braness and "Prace noise. D. Merinen, that are order has the day been decused. In the mass in a medical solution of thich the case and in contrast as decused of thich the case and in contrast as decused of thich the case and in contrast as decused of the public to of costs. It maintain unsure of that "base decused of the public to of costs." "But the miniaturization field is gone. Why don't the cage and its contents revert to ordinary size?" Tor two reasons, Dr. Morrison. In the Fire place, the miniaturatived state is measurable. That is cose of the great fundamental discoveries that make miniaturation possible. At whatever point we stop in the process, it takes very little energy to maintain it is that state. And secondly, the mi even the walls of the cage touchable by unminiaturized hands. - But we are not finished, Dr. Morrison. Shall we continue Morrison, troubled and anable to deny the direct experience, wondered for a moment if he had somehow been dragged into a kind of super-suggestibility that would make him experience whatware he was told he was experiencing. In a choized way, he said, "You are tolling me a grant deal. "Yee, we are, bet only superficially. If you repeat this in America, you will probably not be believed and nothing you say will give the slightest hite as to the cost of the minimutation technique." Bosneova Hind her hand and Kalinin again threw the weich. The white returned and the cape began once again to shrink. It seemed to be going faster new and Horanova, as though reading Morrison's mind, said, "The further it shrinks, the less mass there is to remove and the more rapidly it shrinks further Morrison found himself staring, is a state of neur-shock, at a cape that was a continenter across and still shrinking. But Boranova raised her hand again and the whine died. "He careful, Dr. Morrison. It weights only a few hundred milligness now and it is a fragile object indeed to anyone on our scale. Here. Try this." She handed him a large magnifying glass. Morrison, without saying a word, took it and held it over the tiny cage. He might not ha to make out what the moving object within it was if he had come upon it without prior knowledge, for his mind would not have accepted such an in He had seen it shrink, however, and he stared at it now with a mixture of confusion and fascination He looked up at Boranova and said, "Is this really happening" "Do you still suspect an optical illusion or hypnotism or -- what else?" The wave draws. Dr. Motrison, it would be a mutar achievement than minimization. Look around you. Doesn't everything eithe look normal? It would be an unsual draw indeed that would alter your some recreation of a sinele object in a large room of suchaneed miscellary. Come. Doctor, what we've with "Make it larger," said Morrison breathlessly. Durhney lausthed and surreseved in a onick checks. 'If I lausth, the wind may well blow away Katiska, wheneveron Natasha and Scobia will besh utike me with everythine else in this room. If you with it enlarged, you will have to wait." Bonnova caid, "Durhnev is right. You use, Dr. Montion, you have witnessed a scientific demonstration, nor magic. If it were magic, I could stap my finger and the rabbit would be its normal self again in a normal cage - and then you would know you we action of its normal value, even over a s latively small volume of the Universe, which is why For a while. Morrison was vilent. He found the explanation involving conservation of energy more convincing than the demonstration inelf. Charlatans would not have been so meticalous about obving the commands of thivsics. He said, "It seems to me, then, that your minimutization process can scarcely be a practical device. At most it would only serve as a tool, perhaps, to broaden and expand quantum theory." Bennova said, "Town that would be enough, but don't judge a sochnique by in sinitial phase. We can hope that we will learn how to circumvent these large energy changes, how to find methods of m zation and deminiaturization that will be more efficient. Does all the energy-change have to pass from ele "Have you revealed the second law of thermodynamics?" asked Morrison with expresented politeness. Not at all. We don't expect as impossible 100 percent conversion. If we can convert 75 percent of the deministrations energy into an electromagnetic field --or even only 25 percent - that would be as improvement over the present situation. However, there is hope of a sucheigne oven more subble and for more efficient and that is where you come in " Morrison's even widened. 'If Hznew nothing about this, Why rick me out for your subvation?' You would have done as well with a child out of kinderearten." "Not so. We know what we are doing. Come, Dr. Morrison, you and I shall go to my office while Sophia and Arkady begin the tedious process of recording Katiska. I will there show you that you know quite enough to help so make miniat n efficient and therefore a commercially practical venture. In fact, you will see quite clearly that you are the only person who can help us. CHAPTER 5 - COMA Life is pleasant Death is peaceful. It is the transition that is troublesom -- Dephney Senior

small carriage disopposeing into the opening and the wall closing behind it. The carriage in which they had arrived made a slow circuit of the arc and came to n

An IE Provenski fan Di Marian Branch (Mari

"This," said Natalya Boranova, "Is my own portion of the Grotto."

She sat down in a rather battered armchair that (Morrison imagined) she found perfectly comfortable, having molded it to her body over the years.

He sat down in another chair, smaller and more asserse, with a satin-covered seat that was less comfortable than it looked. He glanced over the surroundings with a sharp sensation of clases. There were ways in which it runninded him of his own office. There was the computer outlet and the large screen. (Boranova's was far more omate than his own -- the Soviet style tended toward the carlieue and Montison fit a mo nentary cariosity as to the reason and then put that aside as a trivial matter

Bonanova said, "We are quite private here. We will not be overheard and we will not be disturbed. Later we can have lanch brought in."

"You are kind." said Morrison, trying not to sound sardonic.

Bozzevo seemed to take it at face value. "Not at all. Add new. Dr. Morrison. I can't hele baviese noticed that Addach is on a fire-same basis with you. Bis of courses to a certain scenaria an uncellured individual and is are to researce. Still, may I ask arain if. denote the conditions that brought you here, we might be based and informat with each other?"

Morrison hestand. "Well, call me Albert, then. But it will be merely a convenience and no sign of friendship. I am not likely to dismiss my kidnapping

Boranova cleared her throat. 'I did try to persuade you to come of your own free will. If necessity had not driven us so hard, we would have gone no farther than that.' then return me to the United States. Send me back new and I will be willing to forget this episode and will make no com

plaint to my government Strey Bacason dook her head. You know that cannot be doos. Necessity still drives. You will see what I mean, shortly. Ent meanwhile, Albert, let us mit together, without nonsense, as part of the global family of science that rises superior to quotions of azionality and other artificial distinctions among harman beings. - Sandy by now you have accepted the scality of minimutations

"I must accept it." Morrison shook his head, almost regretfully.

"And you use our publics?"

"Yes. It is far too expensive in energy.

Tenagine, however, if we lower the energy cost drastically. Imagine if we can bring about miniaturization by plagging a wire into a wall socket and communing no more energy than we would if we we

107 course - but appaundly is call be done. Or, a ary rare, your people course do it. Why all be securely, that "Why all be securely, that "Why all be securely, that "Why and and windown the control for the or of the lamby of science" Secure you on to imply the Societ Union is planning to use initianizations as a wappe of sense lind, one powerful modulus to the secure science with the Societ Union is planning to use initianizations as a wappe of sense lind, one powerful modulus to the secure science with the Societ Union is planning to use initianizations as a wappe of sense lind, one powerful modulus to the secure science with the secure science

"That is not so. The Sovie Those not. Still, if the Soviet Union seeks securcy, it is understandable that other units of the global alliance would begin to wonder if it seeks compass

"The United States has its secrets, has it not?"

Banners and, "All that you up it true. New thirdes, for our a contrary, the world has taken it for granted that Anotonican schoology is experien to Soviet tochnology. That is a constant instant to us, and if, is simulating as back and as throughly revolutionary as minimutation, it is clearly established bar the Soviet Union held the way, then that would be now desirable for us."

"And the elobal family of science that you arread to? Are you a member of that or are you merely a Soviet scientist?"

Tan both," usid Bozanva with a touch of anger." It is were my decision, then perhaps I would open our discoveries to the world. However, I do not make the decision. My government does and I owe them loyaby. Nor do you Americans make it cary for us to do otherwise. Your core

"But won't it stool Soviet pride in their accomplishment to have to call aron an American such as myself to help out?"

Well, yes, it does sour the milk a bit, but k will at least give the United States a chare in the achievement, which we shall acknowledge, Albert. You will be showing yourself a true American partiest and will improve your own repeation if you help us.

Morrison smiled bitterly, "A bribe?"

Boranova shrareed. "If that is how you intermet it. I cannot stop you. But let us talk in a friendly manner and see what will come of it."

'In that case, start by giving me some information. Now that I am forced to believe that miniamization is possible, can you tell me the basic physics behind it? I am

You know better than that. Albort. Is would be dancerous for you to learn too much. How would we, then, be able to let you on back to your constru? - Beiddee, abbouth I can onerate the minimization overem, even I don't know the backs. If I did, our enversment could scaredy risk having me viol the Unit "You mean we might kidnap you as you kidnapped me. Do you think the United States engages in kidnapping?"

"And who are the people who do know the basics of miniaturization"

'That also is not something that, in general, it is safe for you to know. However, I can lift the curtain just a bit in this matter. Pyotor Shapirov is one of them

"Crary Pater," said Morrison, smiling. "Somehow Tra not surprised."

"You shouldn't be. Lum une you uy 'enzy' only as one of your jakes, but it was how how free worked out the back rationale babied miniaterization. Of courses," the added thoughthily, "It may very well be that that required a certain incomity -- or, at any rate, a certain indepretation of thought. It is also Shapirov who free suggested a method of achieving miniaterization.

'How? The conversion of deminiaturization into an electromagnetic field?'

. Beraneva made a face. 'I was memby giving you an example. Shapirov's method is fac more subtle."

"Only roughly. Shapinv points out that the two grant aspects of the unified theory of the Universe - the quantum sepect and the relativistic aspect - such depends on a constant that sets a limit. In quantum theory it is Planck's constant, which is very finey but not area. In relativity, it is the quoted of light, which is very first but not infinite. Planck to the size of energy transfer and the speed of light sets an upper limit to the speed of in that the two are related. In other words, if Planck's constant is decreased, the speed of light would increase. If Planck's constant were reduced to zero, then the speed of light would be infinite Morrison said at once, "In which case, the Universe would be Newtonian in its properties."

sized, which we want for psychological masons I have presented to you only frankly. I am sure we will share m

Benzers unded. The A-confet ge Dagies, day, & he reason for the common composit, day P-Back' connext in decay vel fight brains and the order of effet trains and the order of and trains and the order of effet trains and the order of effet trains and the order of and trains and the order of effet trains and the order of and trains and trains and the order of effet t

Morrison said, "Does Shapir deminianarization can be carried through with the two limits coupled

"He said he did." "Said? Past tense? Does that mean he has changed his mind?

"Not exactly." "Then what has he done

Bozneva bestand. "Albert." the said almost releaderly. "do not eo too fast. I want you to think. You know that miniaturization works. You know that it is roosible, but not tractical. You know that it would be a boost for humanity and 12

"Really, Natalya? Would you and your nation trust the United States if the situation were reversed?"

"There" will Benzows and sighed hearty. "It doesn's constantly to asyste. It is the wakness of humanity that we constantly real bytes with be bed. For toy at the best of cooperation we have anyly for to keep will behave and we will be bed. to be treated asis with be bed. The toy is the best of cooperation we have anyly for to keep will behave and we will be bed.

Morrison spread out his arms. 'I can't answer that. I am a private citizen and do not represent my nation.'

"As a private citizen you can helo us, knowing that you will not be harming your own country."

Teath roombly know such a thing, since I only have your word for it and I don't believe you meressent your ratios are monthan I removed trained. But all this is irrelevant, Nanhya, Even if I wanted to, how on Earth can I help you make miniamrization matching, when I know nothing about the subject? The pariset. In a while we will have heach. Dothney and Kalinin will be through with the deminiaturization of Katinia by then and will join us, together with one other whom you must meet. Then, after lanch, I will take you to see Shap

The not sure about that. Natabra. You sold me tons a while are that it would be dameness for me to meet anyone who mally undersecond minimatration. I mirbh learn too much and this mirbh raise mobilens with my mean to the United States. Why, then, should I risk seeing Shariney?

Horanova said sadly, "Shapirov is an exception. I promise you that you will understand this when you see him -- and you will also understand why we must turn to you."

"That," said Morrison with all the conviction with which he had landy preclaimed the improvibility of miniatutization. "I will never understand,"

Lanch was in a welf-lit room, for errips of the walls, together with the entire colling, were electrolominescent. Bonnova had pointed it out with obvious pride and Montion had refrained from making invideous com

Nor did he express his amounter over the fact that dopits the electroluminoscence there was a small but ornate chandelier contend in the ceiling. Its bulbs contributed nothing to the light, but it undersholdy made the room seen less antiseptic.

As Boranova had predicted, a fifth person had joined them and Morrison was introduced to someone named Yari Konev. "A neurophysiciet like yourself, Albert," said Boranov

Koney, who was darkly handsome and who seemed to be in his middle flurines, had an air of almost gawky youth about himself. He shook hands with wary cariosity and said, "I am most pleased to meet you," in creditable English, spoken with a distinct American access. fou have been in the United States, I imagine," said Morrison, also in English.

"I speet two years doing gradents work at Harvard University. It gave me a striggedid opportunity to practice my English."

"Nevertheless," said Boranova in Russian, "Dr. Albert Morrison does very well in our language, Yuri, and we must give him a chance to practice it here in our country."

"Of course," said Koney in Russian.

Morrison had, indeed, almost forgotten that he was underground. There were no windows in the room, but that was common enough in large office buildings even aboveground.

The meal was not as challent one. Adulty Derhney are with situat concentration and Sophia Kalinia seemed abstracted. Site glanced occasionally at Metrison, but ignored Koney completely. Beranova variable everyone, but said very little. She seemed content to large the floor to Koney

Koney said, "Dr. Morrison, I must tell you that I have followed your work carefully." erises, who had been eating the thick cabbage soup appreciatively, looked up with a quick smile. This was the first reference to his work, rather than to their work, since he had arrived in the Soviet Union.

"Thank you for your innews, but Nambra and Arkady call me Albert and I will have difficulty in responding to different names. Let us all be on a first-same basis for the brief time that remains before I am returned to my own land."

"Help us," said Boranova in a low voice, "and it will indeed be a brief time

"No conditions," said Morrison in an equally low tone. "I wish to leave."

Koney mised his voice, as though to force the conversation back into the track he had chosen. "But I must admit, Albert, that I have been unable to deplicate your observations.

Morrison's line tichtened. 'Thave had this complaint from neurophysicists in the United States.'

"Now, why should this be? Academician Shapicov is greatly intrigued by your theories and maistains that you are probably correct, at least in part." "Ab. but Shanirov inth's neurophysicist, is he?

No. he's not, but he has an extincednary feel for what is correct. Have never known him to say. It seems to me that this must be right,' in which whatever he is discussion hast? moved to be right - at least in mart. He says you are probably on the road to cotabilishing an interesting ruley station." "A relay station? I don't know what he means by that.

"It's what he said once in my bustime. Some private thought of his own, no doubt." He cast a menetratine educes at Montioon, as though waiting for an explanation of the remark.

Morrison simply shragged is away. "What I have done," he said, "is to emable a new kind of analysis of the cephalic waves originating in the brain and to have narrowed the search for a specific network within the brain devoted to creative thought." "There you may be a little overcontimietic. Albert, I have not satisfied myself that this network of yours really exists."

"My results mark it out quite clearly."

"In does and monkers: It is successin here for use can extremelate such information to the much more complex structure of the human huma". "I admit I haven't worked with the human brain anatomically, but I have analyzed human brain waves carefully and those results are at least consistent with my creative structure hypothesis."

This is what I haven't been able to deplicate and what American researchers may not have been able to deplicate, either.

Again Morrison shrugged. "Adequate brain wave analysis is, at best, a monumentally difficult thing at the quintenary level and no one else has given the years to the problem that I have." "Or possesses the particular computational equipment. You have designed your own program for the purpose of brain wave analysis, haven't you?"

"Yes, I have."

"And described it in the literature "Certainly. If I achieved results with an undescribed program, they would be worth nothing. Who could confirm my results, lacking an equivalent company

"Yet Base heard, at the International Neurophysical Conference in Brosouls hast year, that you are continually modifying your program and complicing that the lack of confirmation stems from the use of insufficiently complex programming incapable of Pourier analysis to the proper degree of sensitivity."

as their mading to the AIN and don't keep up with relevant literature elsewhere, that "No, Yari, that is false. Entirely false. Have modified my pregnen from time to time, but I have carefully described each modification in Compare Technology. Have tried to publish the data in The American Journal of N

"And yet -- "Konev passed and frowned in what seemed to be uncertain thought. "I don't know if I ought to say this because it may be something else that will antagonize you.

is ahead. I have, in these hot few years, learned to accept all kinds of remarks-hostile, successic, and -- worst of all -- physing. I am quite hardened to it. -- This is good chicken Kiev, by the way.

"This is a exect meal," marmared Kaliinin, almost under her brank. "Too battery -- bad for the figure."

"Hah," said Denhnev loadly. "Ind for the figure. That is an American remark that makes no sense in Rassian. My father always said, The body knows what it needs. That's why some things taste good

Kaliana closed her eves in onite obvious distante. "A recipe for suicide." she said.

Morrison noticed that Koney did not look at the young woman during this bit of byplay. Not at all.

He uid. "You were savine. Yuri? About somethine that might antaeonize me, you thought?"

Koney said, "Well, then, is it true, Albert, or not true that you actually gave your program to a colleague and that, using it in your computer, he was still unable to deplicate your results? "That's true," said Montison. "At least my colleague, an able enough man, said he could not duplicate my results."

"Do you suspect he was bring?"

"No. Not really. It's just that the observations are so delicate that to attempt them while certain of fails "Might one not arene the other way around. Albert, and say that your certainty of success leads you to imagine success?"

"Possibly," said Morrison. "That has been pointed out to me several times in the past. But I don't think so."

"One more runner," said Koners. "This I truly have to repeat, but it seems so important. Is it true that you have claimed that in your analysis of built waves you have occasionally sensed actual thoughts? Merien shock to had signed, "Taxe are made such a dain in pirt. There aid to a collapse, once or revice, their incommands on the head wave analytic three are exclusionally involved to sen to find three houses are very of utility whether the three houses are unity mine or whether are entrolymatic or the head to a collapse. "Is such a manuface conceitable?"

'I suppose so. The brain waves produce tiny fluctuating electromagnetic fields."

"Ah! It is this, I suppose, that made Academician Shapirov make that remark about a relay station. Itnain waves are always producing fluctuating omagnetic fields - with or without analysis. You dush resonance is what it is - to the thoughts of someone in your presence, no matter how intensedy he may be thinking. The resonance takes place only when you are bushy studying the brain waves with your progr d computer. It presumably acts as a miay station, magnifying or intensifying the brain waves of the subject a

'I have no evidence for that except for an occasional fugitive impression. That's not enough "

Re - E. Durannes-Jihark-Menian Princes-Mileliah Dedambaars. 26 jane Panasis-320 mart-510-51. 520 minuterin 200 alam "It might be. The human brain is far more complex than any other equivalent piece of matter we know of."

"What about dolphine?" said Dezhnev, his mouth fall.

"An exploded view," said Keney at once. "They're intelligent, but their buins are devoted too entirely to the minutiae of eximation to allow encouch room for abstract thought on the human scales "I have never studied dolphins," said Morrison indifferently. "Igners the dolphine," said Konev impairantly. "Jost concentrate on the fact that your comparer, properly programmed, may act as a ruley station, puosing thoughts from the mind of the subject you are studying to your over mind. If that is no, Albert, we need you and no other purcess in the Morrison said. frewniae and reachine his chair away from the table. Then if I can tak up thoughts by way of my computer - a chain I have never made and which, in fact. I deav -- what can that possibly have to do with minia Boranova rose and looked at her watch. "It is time," she said. "Let us go and see Shapirov no Morrison said, "What he says will make no difference to me." 'You will find,' said Boraneva with a bint of steel in her voice, "that he will say nothing -- bet will be stretly convincing just the same." Morrison had kept his sumper well so far. The Soviets were, after all, treating him as a guest and if he could overlook the small matter of his being carried off by force, he had little of which to complain. But what were they getting at? One by one, Bennova had introduced him to others -- first Darkney, then Kalinin, then Konsy -- for razons he had not ponetrated. Over and over, Bennova had hinted of his surfalsess without actually usying what it utight by. Now Konsy miked of it and was equally uncommunicative And now they were to son Shapirov. Clearly this had to be a climax of sorts. From the first mention of him by Bonneva at the convention two days ago, Shapirov had seemed to hover over the whole matter like a thickening fog, it was he who had worked out the minimumization precess, he who seemed to dow It rumained for Morrison, now, to resist any bladishments or arguments that Shapirov could present. If Morrison instead that he would not help them, what would they do when all the blandishments and arguments had fails Crade threat of force -- or torture? Merrison qualied. He deed not put his refusal on the basis that he would not. He would have to presende them that he could not. Sarely that was a ransonable position on which to take his stand. What could neurophysics - and a dubious, sunceepted his of neurophysical work at that - have to do with mit But why dda't day see that for themselved? Why did they all act as though it was concirculated that a person like kinetic, who had avore as much as though of minimutation until some forty-sight hours before, could do something for them - them, the only expense in the field - that they could not do for themselved? It was a rather lengthy walk alone considers and, lost in his own uncomfortable thoughts. Morrison did not notice that they were fewer in number than he had thought. He said to Boranova suddenly, "Where are the others?" She said. "They have work to do. We do not have forever to do what we must, you know Morrison shock his head. Charry, they were not. None of them seemed to scatter information. Always close-lipped. A long-standing Stwire habit, perhaps - or something that was ground into them through their work on a socret project in which even the scientifies dand not resp conside the narrow limits of their int Wree they coning to him as a storybook American generation? Norhing he had over done, surely, would give anyone that improvise. As a matter of fact, he was binned? a merow speciality, incoving virtually nobing conside of neurophysics. - This was a versuring disease of modern science, he thought They had ensend another elevator, something he had scarcely bothered to notice, and they were now on another level. He looked around him and recognized characteristics that seemed to trans-"Are we in a medical wine?" he asked

"A horrinal," said Boranova. "The Grotto is a self-contained scientific complex." "And why are we here? Am I -" He stopped suddenly, as the horror of the thought smore him. Was he to be drugged or, by some other medical means, made more compliant? Boranova had walked on for a moment, then stormed, looked back, and came toward him, savine suspeidily. "Now what is friedmanne you?"

Morrison felt ashamed. Were his facial expressions that transparent? "Nothing is frightening me," he grambled. "I am simply tired of walking aimleosly "What makes you think we are walking aimloody? I said we were going to see Pyoter Shapirov. We are walking toward him now. - Come, we have only a few steps left."

They turned a corner and Boraneva beckoned him to a window.

, He supped to her side and looked in. It was a room and these were a number of popple present. There were four bode, but only one was occupied and it was surrounded by equipment that he did not recognize. There were table and glasses ward the bed and Morrison counted a dozen functionaries, who might be doctore, narses, or medical technician Boranova said, "There is Academician Shapirov."

. "Which one?" said Morrison, his eyes traveling from one of the figures to the other and finding no one who seemed similar in appearance to the scientife he recalled haVing met once

"In the bed."

'In the bed? He's III, then!

"Worse than ill. He is in a coma. He has been in a coma for over a month and we strongly suspect it is an intevenible state." 'Tra tartibly sorry to hear that. I presume that is why you referred to him in the past tanse before knrch.' "Yes, the Shapirov we know is in the past tense, unless --

"Unless he recovers? But you just said the coma is probably irreversible."

"That's trace. But neither is he brain-dead. The brain is damaged certainly or he wouldn't be in a coma, but it is not deal and Koney, who has followed year work closely, thinks that some of his thinking network is still intact.

*A4 * aid Morison, the light busiling. The jus to indextand. Why didth you explain this to bujon with? Hy you had wanted to consult nee on such a mater and had explained, I might have been willing to cense here with you voluntarily. Yet, on the other hand, if I went to study his carebul functioning and will you, Yee, Yan Kinev in right; there what good will that do you? That will do us no good at all. You don't yet begin to understand, you son, and I can't explain exactly what is is I want until you understand the problem. Do you quite scalare what is basied there in the still-living periods of Shapirov's basis?

"His thoughts, I suppose,"

"Specifically, his thoughts of the

of Planck's constant and the speed of light. His throughts of a method for making minimatization and dominimatization rapid, low-energy, and practical. With those thoughts, we give humanity a suchingue that will involutionian estimate and society --more than anything since the investion of the transient. Publics method anything since the discovery of fine. Who can will "Are you sare you're not beine overdinanatic?"

No, Albert. Does is occur to you that if minimutaziance can be tied in with a vest acceleration of the speed of light, a spacehip, if sufficiently minimutation, can be user to anywhere in the Universe at many times the ordinary speed of light. We work need how the share her to anywhere in the Universe at many times the ordinary speed of light. We work need how the same her work need to a state of the same her ordinary speed of light. "I can't believe all that."

"You couldn't believe miniaturizatio

Today mean I carb believe the results of miniantrization. I mean I carb believe that the solution of the resolution is retransently locked in the brain of one man. Others will eventually think of it. If not now, then next year of

The case to wait when you are to concerned. Alter The transh is with a set to be a set to

lanck's constant and the speed of light, he who seemed to value Morrison's neurophysical theories, and he who made the remark about the computer as volay station that had apparently set off Konev's conviction that Morrison - and only Morrison - could help them

"Nevertheless, Natalya, if you publish what is now known of min ration and make it available to the Global Association for the Advancement of Science, then immunable scientists will per their minds to it and quickly enough someone will devise a method for coupling Planck's constant and the speed of light. "Yes," side Bonnovs, "and perhaps the scientist who will obtain the key of low-energy miniaterization will be an American or a Prenchman or a Negetan or a Ungenyan. It is a Seviet scientist who has it now and we don't want to low the credit."

Morrison said, "You forget the global followship of science. Don't cut it up into segments."

"You would speak differently if it were an American who was on the edge of the discovery and you were aded to do something that might possibly give the condit to one of us. Do you remember the biency of the American macrine when the Soviet Union was the first to per an antificial canditas into orbit?" "Surely we have advanced since then."

Yes, we have advanced a kilometer; but we have not advanced ton kilometers. The world is not yet entirely global in its thinking. There remains rational pride to a considerable essent. 'So much the works for the work!. Still, if we are not global and if national pride is something we are expected to retain, then I should have miss. As an American, why should I be disturbed over a Soviet scientist losing credit for the discovery?

"I ask you only to understand the importance of this to us. I ask you to put yourself in our place for a moment and use if you can grasp our desperation to do what we can to find out what it is that Shapirov knows.

Morrison said, "All right, Natalya. I understand. I don't approve, but I understand. Now -- listen carefully, please -- new that I understand, what is it you want of me' is want you," said Boranova intensely, "to help us find out what Shapirov's thoughts -- his still-living and existing thoughts -- are."

They? They's noting is my they that makes that possible. Every granting that thisking networks do exist, and that brain waves can be minutly analyzed, and every granting that I occasionally get a mental image, possibly imaginary, possibly imagina

'Not even if you could analyze, in detail, the brain waves of a single nerve cell that was part of a thinking network "I couldn't deal with a single nerve cell in anything approaching the necessary kind of detail."

"You forget. You can be miniaturized and be inside that single nerve cell."

And Merricon stand at her in sick heres. She had mentioned somehing like this at their first meeting, but he had par it askle as nonsense - hontifying, but nonsense, since minimatization, he was centain, was impossible. But minimatization was not impossible and new the horror wa

Morrison did not then, nor could be at any time alterward, clearly recall the events that immediately followed. It was not a case of everything going black as much as everything having blamed

His next clear memory was that of byter on a couch in a small office with Beranova looking down at him and with the other three - Dechney, Kallinin, and Koney - byhind her. These three came into focus more slowly. He tried to straggle into a sitting position, but Koney moved toward him and placed his hand on Morrison's shoulder. "Please, Albert, rest awhile. Gather your strength."

Merrison looked from one to another in confusion. He had been unset, but he did not clearly remember what he had been unset about. "What happened? How -- how did I get here?" He looked around the room again. No, he hadn't been here. He had been looking through a window at a man in a hospital bad.

He said, puzzled, "Did I faint?"

"Not really," said Bonanova, "but you weren't quite yourself for a while. You seemed to undergo a shock "

Now Morrison remembered. Again he triad to lift himself into a sitting position, more streamenaby this time. He struck Konev's restraining hand out of the way. He was sitting up now, with his hands on the coach on either side of him

"I remember now. You wanted me to be miniaturized. What happened to me when you said that?" "You simply swayed and -- crampled. I had you placed on a stretcher and brought here. It didn't see

"No medication?" Morrison looked variable at his arms, as though he expected to see needle marks through the slarve of his cotton blouse.

"None. I assure you." "I didn't saw anything before I collarsed?"

"Not a word."

"Then let me answer you now. I'm not going to be miniaturized. Is that clear?" "It is clear that you say so."

Denhary sat down on the coach next to Morrison. He had a full bottle in one hand and an empty glass in the other.

"You need this," he said and half-filled the glass. "What is it?" asked Morrison, lifting his arm to ward it off.

"Vodka," said Dezhnev. "It's not medicinal, it's nosrishing."

"I don't drink." "There is a time for overvihing, my dear Albert. This is a time for a warming hit of vodka, even for those who do not drink."

"I don't drink out of disapproval. I can't drink. I have no head for alcohol, that's all. If I take two swallows of that, I will be drank within five minutes. Completely drank."

Derher's sysbors want up. "So' What sher purpose is then in disking? Come, if you are backy moogh to win your guit is a fire incepanieve sips, thank whatever you find hankable. A very small amount will warm you, stimulan your periphenel circulation, clear your hand, to concentrate your thoughte. It will even give you courage Kaliinin's voice sounded in half a whisper, but was distinctly audible. "Do not expect miracles of a little alcohol."

rrisen's head twiened sharply and he looked at her. She did not seem as pretty as he had thought her on their first meeting. There was a hard and unforgiving look about her.

Morrison said. They never represented myself as a connecess may. They a never represented myself as arythine that yould be of help to you. They maintained from the beginning that I could not do anythine for you. That I am here as all is the neuk of companion, as you all know. What do I owe you? What do I owe you?

Boranova said, "Albert, you are shivering. Take a sip of the vodka. You will not be drank on a sip and we won't fo

About a shouth to show braver is a small way. Marrison, after a moment's heataction, took the shaw boat and no vallowed a bit of the loser modeless's. He fit a burning smoothing is bit shows, which massed. The trans way rather events than otherwise. He took a larger of and handed the shaw back. Dothery took is and shawd it and the bestis on a small table on his side of the couch.

Morrison triad to speak, but he coughed instead. He waited, cleared his threat, and said breathily, "Actually, that's not so bad. If you don't mind, Arlady ---Durhney reached for the elses, but Boranova said, "No. That's ensenth. Albert," Har interestous estatus storeed Durhney. "We do not wate you drank. Albert, Just a little warm so you will litem to us.

Morrison could feel the warmth rising within him, as it always had when, on rare occasions of social bonhomic, he had had some sherry or (onco) a dry marrini. He decided he could handle any argument she could produce

"All right," he said, "say on," and set his lips into a firm and unyielding line

"I don't say. Albert, you owe as anything and Tm serry that all this came as such a shock to you. We are aware that you are not a nockless man of action and we tried to brank it to you as combine. I had boned, in fact, that you would see what was constrained on your own, without any necessity of explanation.

"You were wrong," said Morrison. "At no time would such a mad thing h

"You see our necessity, don't you?"

'I see your necessity. I don't see it as min-"You might feel you owe it to the cause of global science."

"Gibbal science is an abstraction that I admire, but I am not likely to want to sacrifice my highly concrete body for an abstraction that doesn't seem to exist. The whole point of your necessity in that it is Soviet science that is at stake, not global science.

"Then consider American science," said Boranova, "If you help us, that will become an enemal part of the victory. It will become a joint Soviet-American victory."

"Will my part be publicized?" demanded Morrison. "Or will the thing be announced as purely Soviet?"

Boranova said, "You have my word." "You cannot commit the Soviet Government."

Gen E Duranese Charles Meetings Princes

"Horrible," said Kalijain. "He indees our covernment by his own."

Konev said, "Wait, Natalya. Let me talk to our American friend, man to man." He sat down by Morrison and said, "Albert, I appeal to your interest in your work. So far, you have achiev ng evidence. Do this for us and you will become, at a bound, the most

Merrison said. "You're askine me to risk my life on an untried technique."

"That is not upprecedented. All through history, scientists have risked death to cominue their investigations. They have gone up in balloons and have dipped under the seas in primitive annoval spheres to ultid midt detroy them or, conceivably, the entire planet action, knew well that the explose

Morrison said, "You spin dwares. You would never let it be known that an American played a role. Not when you confiss your desperation at the possibility that Soviet science would lose the credit.

Koney usid 'Let' be honey with each other. Albert. We couldn't hide your data in this even if we withed to. The American conventue to two we because they war you her. Well, dev will know - or at least ranse - whar we wanted you here for and whar you did for se, once we announce or success. And they will set to it that American convents, it was for and whar you here.

Morrison sat silently, head bent, for a while. There was a floched spot, high on each check, as a result of the vodka he had drank. Without looking, he knew that four pairs of eyes

He looked up and said, "Let me ask you one question. How did Shapirov come to be in a coma?"

There was again a silence and three of the pairs of staring eyes shifted to Natalya Boranova

Morrison, seeing that, also stared at her. "Well?" he said.

Boranova said, "Albert, I will tell you the truth, even if that defeat our aims. If we try to lie to you, you will be right not to believe anything we say. If you see we are trathilal, then you can believe us in the fature. Albert, Academici nently. That can happen, you see, and we are not hiding it from you. Now give us the coulit for utter fo

CHAPTER 6 - DECISION

We are always certain that the decision we have just made is wrong

-- Dephney Senior

Now, finally, Morrison rose, foeling a triffe automady on his foor -- whether from the vocks, from the general tansion of the day, or from this last revelation he did not know or care. He stamped his foor a little, as though to firm them, then deliberately walked the length of the small room and back

He faced Bioranova and vaid in a hareb voice, "You can minimize a rabbit and nothing some to happen to it. Did it secur to you that the haman brain is the most complex bit of manter we know and that, whatever else might survive, the haman brain might not? "It did," said Benneva stolidy. The all our investigations have shown us that miniaturization does not in the laser affect the interrulationshires within the object being miniaturized. In theory, even the human busin would not be affected by miniaturization."

the background and the backgroun

Derhary said. "Don't speak nonsense. We are not mad. Nothine we did was lightly undertaken. The fault was Sharinys's."

Bonanova said, "In a way, it was. Shapirov had his eccentric ways. 'Crary Peter' I believe you call him in English and that is perhaps not so far off. He was insust on having the miniat tion experience. He was certaine old, he said, and he would not, like Moses, reach the Promis

"He might have been forbidden to do so."

'By me? I would forbid Shapizov? You can't be serious.

"Not you. Your covernment. If the ministration

"Station thranned to shades the revict above tribe di not have his var and that could not be risked. Not is or eventment mash, hi the triat of elobal consentation, Whether that is for the better or for the verse. I cannot sav, have eventable maintanation of the better of the better

Morrison mattered, "Absolutely mad."

No." and Beenavore, Yer we did net more without precursions. Dopine the fact that every searcises in minimization is costly and wash objects through the Central Coordinating Committee, we instantiated charparets and write we brought them back and could detect to charges in them - other as a result of minimum undies of their behavior or by magnetic reson

"A chimpanase is not a human being," said Morrison.

"Something we were aware of," said Boranova erzwely. "Therefore, we miniaturized a human being next, A volumeer, Yuri Koney, to be precise."

Knew oak, "It had to be me. It was I who full most enoughy that the human brain would not be affected. I am the neceptybicit of the project and it was I who made the necessary calculations. I would not sek another human brain go trick his outity on my calculations and my cartainty. Life is one thing -- we all lose it nonner or later. Statisty is quite another." "So brave," whispered Kalimin, looking at her fingerips, "the deed of a true Soviet here." Her lip trembled, as though on the brink of a succer.

Looking firmly at Montiene, Knew said, "Jam a logil Soviet citare, but I dd not do it for nationalite motives. They would be, in this cause, invitenze 1 dd is as a matter of decency and of existific ethics. Thad confidence in my analysis and of what work was my confidence if I would not tok myself on it? And I is a matter of something else, you. When the hierey of minimation tion is meereful, I will be listed as the first baarant being ever to have been onlyiered to the precess. That will eclipture the deeds of a graz-grand-tacks of mine who was a general lighting the German Nation in the Gener Pariotic War. And I would be plaused with that, not out of valuative but out of a belief that the comparent of paces should always be hadd superior to victuries in wa Bennevs said, "Well, putting ideals to one olde and paosing on to the facts. Yatri was minimum drived review. First, he was taken down to about half his height and was restricted in generative coder. Then he was minimum do to the size of a mouse and again was restored in particle order.

before I do, but even then, so what? A girl who is tired of me is not much good to me and, after all, there are others

Morrison said, "And then Shapirov?"

'And then Shapirov. He was by no means easy to control leven this far. He argued vecifienously for the chance to be the first person miniaturited. After Kesev's first vorture into the small, it was all we could do to personade him to wait for a second and more district attempt. After that we could control him no more. Not only were we force urize him, but he swore that he would abandon the project and somehow make his way out of the country to begin a miniewhere if we did not minimuzize him to a genuer extent than we had Koney. We had no choice. If 'Crazy Peter,' as you call him, were mad enough to speak of emigrating, that would go beyond what the government would be willing to allo

"And that meand the limits of solers, did is?"

No We have every means to thick he was in perfect order, own minimatude to far. He was being brought back and them at one point in the dominimatization them was a minuberrane. Deministration to keep lace a will to opticly and the temperature row elightly in Shaptrov's body. It had the effect of a high fiver – not enough to idilita, but enough to damage lac bains permit. arization had to be completed and that took time. It was an appalling catestrophe and all that we can hope for is the chance to salvage what we need from what is left of his brain.

"There may be another misadvemure, as you call it, if I were to be miniaturized. Buy that so?"

"Yee," said Remove, "that is so. Ident dany it, There have been failures and misadventures throughout the history of science. Story you need no muniador that there were deaths of comments in space both on the American and Soviet sides. That did not prevent our present softement of the moon -- and of space issuelf -- as a new home for humanity.

"That may be so, but all advances in space were made by volumeers. No one was launched into space against his will. And I am not volu

'I am not going. Natalya, either alone or with the Red Army

Benzers incered the senark. "With you on the shis," she tail, "with you on the shis," she tail, "with be you four. Movell, Sonhia, Yant, and Ackabr. That is when Thave introduced each of them to you. We are all contents this, we will not be consider an ocean or renetration the second of oceas. We will instead each of the tail, "with you on the shis," and ackabr. That is when Thave introduced each of them to you. We are all contents the second or and reservation the second or renetration the second or renetr

"Yes. I can resist that. And easily. I will not go."

And Morrison, first clenched, said stabbornly, 'I will not join you. I will not do it,'

Boranova said. 'I am so sorry. Albert, but that is the wrone answer. We will not accert it.

again. If this was going to be a straightforward He said descented. Snoth we know this whole thins is a transmotor to execution to two the base is an execution to the need of list? All we have is some statement to Station. Unit that conce? Duth as two evidence? Any existancian? Any mathematical analysis? - In was stating more than a statement - as instatianty execution - was it?

Morrison triad to sound confident. After all, if Shapitov had given them anything substantive, they would not now be trying the despense trick of trilling his brain for something useful. He held his breach, waiting for the response.

Benners looked a Know then usil with a bade of mixtures. We will continue our roky of hillse the fat and undered runt. We have northine but some runnals Stationy made, as you've messed. He entired interfation there is a fat of history and a second file control for execution or of bits

"But how can you tell, under those circumstances, that such an unsupported speculation would have any validity whatever?"

"When Academician Protor Shaoirov said. I feel it will be thus and so," that is how it turned out to be."

"Come on Always?"

"Almost always. He could have been wrong this time."

'I admit that. He could have been

"Or if he had some notion which would really prove of use, it might have been localized in the part of the brain which has been destroyed.

"That is conceivable."

"Or if the period is worked and is will in the intert mention of the brain. I might not be able to intertwee the brain servers memory,"

"That may well be."

"Putting a all together: Stupiers's suggestion may be wrong and, even if it int), it might be out of mach or, even if it int), I might not be able to interpret it. Considering that, what are the chances of success? And carb you see that we will be putting our lives into

Tousdaring the matter objectively, " used Bannesses, "to woold usen the chaceus an very small. However, if we do not hance for access are user and they are not zero. Date the circumstance, we must take the risk, even though the bost we can usy for our chaceus or functions are they are not zero.

"For me," said Morrison, "the risk is too great and the chances of success are too small Boranova placed one hand on Morrison's shoulder and said, "Surely that is not your final decision.

Think about it. Think about the value to the Sevier Urison. Think about the benefits to your own country that will result from your acknowledged naticipation. to the needs of elobal science, to your own fame and restation. All this is in from of delate it. Analysis it are your servenal four. These are understandable, but all achievement in life results the overcomine of faur

"Thinking about it won't change my mind."

Think about it util formore mergine, answer. That's fifteen hours and it's all we can ensue you. After all, balactive frame and we don't have a lifetime. Post Sharinov might lines on it come for a decade, but we don't have bow how what is left of his bain will remain his ideas and we dant new static very hear at all."

"I can not and will not concern myself with your problems."

Branners semind to hair none of his details and related. See uid in her unfailingly genite voice, "We will not attempt to prevade you further right nove. You may have a leisently disact. You may wack our holovision programs if you wind, view our book, think, deep. Adady will accompany you back to the host and if you have any more questions, you need only ada his

Morrison nodded.

"And Albert remember.)

"Take it now. It will not change."

"No. The decision must be that you will join us and help us. See to it that you come to that decision -- for come to it you must -- and it will be easier for all of us if you do so gladly and yolu

In period to be a quist and thought id detext for Meriton and not a very filling cost – for he found to could only pick at his food. Durbanev seemed quist usualfected by the other's lack of appentix and reactions. He are vigenously and speka inconstity, durving on what was approaches a large stock of futurey stockes – in all of which his father played a losy role — and was clearly dilighted to by them one

Morrison smilled faintly at one or two, more because he recognized from the other's raised voice that a search line had been advanced than because he heard them with any interest at all.

Valer Paters, the valence who had served then at backet, was still there at dates. A long day - be softened in the wages or it was required by be extracurscular dates. Either way, due givened at Dethere each size the gapscaled the table, potage (Merrison theopher datast) because the disoppresed of his sortice, which unded to be disoppreciaf at the SS

Merrison di la praticulari qui gi la cosa thongho. Nov data le vas considering du diama probability of petrag avoy from de Garm – from Makelgard – from de Socie Usian – la vas begining to fai a pervente doppintement ar vhalto might be noiseg. He frond hindel deplanating par a liste on de matter of minimization, of using 1 to prove du vosto et la disconsectario de la disconsectario

He recognized the fact that, of all the arguments presented by Boranova, only the personal one had shaken him. Any reference to the greater good of science, or of humanity, or of this nation or that was just idle rheteric. His own place in science was semething more. That seemed within him.

When the serving woman passed near the table, he stirred himself to say. 'How long must you say on, waitrood

Way friendly - if do is to be blieved. If we, hey were very discrete about it. But what's the difference? She doen't read him to support the child. Her salary is a large one and the day-case conner takes loving care of her daughter when he is at work. It is just a nume of ensation with her.

Who known? Lower take their disputes to secondly. I myself have never let myself fall is low - not poetically. If Has a pit, I play with her. HI get tired, I nove on. It is my good formate that the women I angage are as prag-pragmatic - init that a good worl? - as I am and make little fass. As my father used to ony, 'A weman who doesn't fuss has no fasts: Son

She looked at him without favor. 'Until you two grand dukes can bring yourselves to stir out of here.' There's no rash," said Duchney as the imposed bit glass. His speech was already shared and his face was Rinhod. "I am so find of the comrade waitress, I could stay on for as long as the Volga flows, that I might gaze on her face

"As long as I don't have to gaze at yours," muttered Paleron.

Morrison filled Dezhnev's glass and said, "What do you think of Madame Boranov

Durhney gand at the glass orbibly and dd not offer to HR is immediately. He said with an anompt at gravity, 'Not a firer-class scientist, I am told, but an excellent admin-ministrator. Keen, makes up her mind quickly, and absolutly inco

-corruptible. A puin in the neck, I should think. If an administrator is incorr- no infernally honest, in makes life hard in so many little ways. She is a worklipper of Shapizov, too, and she thinks him incorr- no, incompto- no, incompto-Morrison was not sure of the Russian word. "You mean she thinks he's always right."

'Exactly. If he hints that he knows how t

mike minimutation doop, du/c unre be can. York Know is user of a, no. Net another of the woohipper. But i's Bern-Bonneva whell word you into Shapitov's brain. One way or another, du'll sond you there. She has bet ways. -- As for Yari, that link shorer, bi's the suit scientified divides and to point at his reflield drink post

'Tm interested in Yuri Koney,' said Morrison, his eyes following the lifting of the glass, 'and in the young woman, Sophia Kalimin

nhnev leared. "A fine young piece." Then safly, shaking his head, "But she has no sense of humor

"She's married. I take it."

"What unlit them on 1 nearder?"

"I suppose Yuri is much like that, too, isn't he?"

Durhney shock his head more violently than the occasion seemed to remain. "No.

'Besides, as a scientist at Malenkigrad, she has her special dispen-pensations. The government looks the other way." "It strikes me." said Morrison. "that Sophia is much interested in Yuri Koney."

Dezhnev had emptied his glass again and he held out his hand when Morrison made a move to refill it. "Enough! Enough!"

"She said she had had a baby."

"Yes, a little gift, but it ini't the signing of the marriage book that makes one program. It's the game of bud -- married or not."

"You see that, do you? It takes little shrewdness. She is so interested that she has made it quite clear that her child was the result of Yuri's collaboration in that little game I spoke of "But he denies it. And very vigorously, too. I think it is rather humorous, in a bitner way, that he remains compelled to work with her. Neither one can be spared from the project and all he can do is present show does

"Does the paritanical Soviet Government approve of this?" "No, but its approval was never asked, I think." He burst into laughter

"I noticed that he never looks at her, but they must have been friendly once."

"Never enough," said Morrison calmiv, "You were tolline me about Yuri,"

"What is there to tell? Yuri is not a man to fly from y onan, but I have heard -" He stared blearly at Morrison. "You know how one hears -- one tells another who tells another and who is to know whether what comes out o aine, they say, and out went poor little Soviet Sophia. Perhaps that was it. Perhaps he came back different and perhaps he still dreams of his los

"And is that why Sophia is so ill-disposed to Americans?"

Desheev stared at the glass of volfa and sipped a lifele of it. "Our Sophia," has used, "has never liked Americans. This is not suppoints," He leared toward Morison, his breath heavy with fixed and drink. "Americans are not a lovable people -- if I may usy on without efforts Morrison watched him for half a minute or so, then raised his hand to becken the servine woman. She came at once, her ample hips ovinging. She stared at the unconscious Denhnev with rather more than half a sneet. "Well, do you wish me to get a large pair of tongs and use them to carry our prince here to his bed?"

"Not just yet, Miss Paleron. As you know, I'm an American." "As everyone knows. You have but to say three words and the tables and chairs in this room nod to each other and say, 'An American'

Morrison winced. He had always been proud of the purity of his Russian and this was the second time the woman had supered at it.

wertholess, "he said, "I have been brought here by force, against my will. Thelieve it was done without the knowledge of the Soviet Government, which would have disapproved of and provented the action if they had lacove. The popula here – Dr. Bornnova, when you have referred to as the Taurinn – have acted on their own. The Soviet Government, which would have disapproved of and provented the action if they had lacove. The popula here – Dr. Bornnova, when you have referred to as the Taurinn – have acted on their own. The Soviet Government, which would have disapproved of and provented the action if they had lacove. The popula here – Dr. Bornnova, when you have referred to as the Taurinn – have acted on their own. The Soviet Government, which would have disapproved of and provented the action if they had lacove. nt should be told of this and they will then act speedily to return me to the Unit

The waitross part her first on her hips and said, "And of what manner is it to anyone either here or in the United States as to whether I agree or not? Am I a diplomat? Am I the reincamated spirit of Tear Peter the Great Diritker?" "You can see to it," said Morrison, suddenly uncertain, "that the government learns of it. Quickly."

What is it you think, American's That have but to still any lower, who is on the Previdian, and all will be well for your What have I to do with the government? What were - aid is all invitories, Contrade Foreigner - I do not with you to take to use in the fadion again. Many a fina, logicitizes has been hepdevely compr

She left in a floance and with a scowl and Montson stared after her in dismay. And then his head whiled in surprise and associations when he head Derheev's voice saying. "Albert, Albert, are you satisfied, my child?"

Dothers' hand was mised from his pillowing arm and, shough his syos ware a little bloodshot, his voice seemed to have lost in fuzziness. He said, "I wondered why you ware so anxiess to fill my glass, so I gobbid a little and let my will collapse. It was all very interesting." "You are not drunk?" said Morrison, goggling at the other in wonder.

"I have been more solver in my life, centainly," said Dathney, "has I am not unconscious, nor have I bean. You non-drinken have an exaggement loke of the speed with which all accomplished Sovier citizen will full unconscious with drink - which shows the dangers of bein

Merrison still found himself in a state of disbelief over the failure of the waitness to constrate. "You said she was an intelligence operator." "Did II" Dathere dragged. "I thick I usid I suspected ob was, but suspicious aut often wrong. Beider, do knows un brene than you do, ny Idié Albert, and was prohably under no illusion that I was drank. III bet you sun ribba to a kopeck that the know i ing with both ears. What would you have her say in such o

The there can," stalt Matrices, taking bear, "the will have had will a water being your generatore of the state of affairs. Your government, to work a international incident, will then other use of thes, polsibly with an upday, and you people here will have sented will have been and weak to the United States of your own access

Dothare laughed. "Your wass your time, my dever intigent. You have too remands a notion of our government. Conceivably, they may be willing to let you go someday bet, regardless of possible embantsonnent, no before you have been minimuted and --"I don't believe anyone in authority knows you kidnamed me. They cannot approve once they find out."

"Maybe they don't know and maybe they will griad their teeth when they find out - bet what can they do? The government has invested too much money in the project to let you go before you have had your chance to make it practical, on that it will ropsy all that has been equare - and more in addition. Well "Doen't that seeme logical to you?"

"No. Because I won't help you." Morrison felt his heart harden once again. "I will not allow myself to be minia That will be us to Naucha. She will be firstone with you, you know, and will have no new. You mailize that you calloudy attempted to have everyone in the resisci threew into the sovenment's had mace, have some of so mitted - or worse. And this, after we had transit you with perfect consideration and kindness."

'You kidnapped me." "Even that was done with perfect consideration and kindness. Were you hart in any way? Miensated? Yet you have tried to harm us. Natasha will represe you for that."

"How? Force? Torture? Drugs?"

Dathery tuned his oper up to the celling. 'How little you know our Nataria. She describ do such things. I might, but the would it's She's as much a guntle chickne-heart as you an, my wicked Albert -- in her own way. But the will force you to go along with us.'

"Well? How?"

"I don't know. I can never quite make out how she does it. But she manages. You will see." His smile developed a welfish edge. And when Morrison saw that smile, he finally realized there was no es

The next morning Morrison and Durhnev neuroned to the Gento. They entered a large windowless coiling-lit office, which Morrison had not seen before. It was clearly not Biomersh' and it was very improvine, as anything with an outstations water of space i

Durhney said, "I have brought him, you see. The mischierous follow tried to use the charming Paleron to effect an escape by intriguing with the government behind our back."

"I have received the report," said Boranova quietly. "Please leave, Arkady. I wish to be alone with Professor Albert Montison."

"Is that safe, Natasha?" "I think so. Albert is not, in my opinion, a man of violence. -- Will I be safe, Albert"

Morrison spoke for virtually the first time that day. "Let's not play games," he said. "What is it you want, Natalya?"

Bozanova genued with her hand perceptorily and Dezhnev left. When the door closed behind him, she said, "Why have you done this? Why have you trie with someone you thought was an imelligence agent watching us? H "Yee," and Marrison angely, "yee have. Why can't any of yee get is through your head that hijacking me to the Serier Union is not consetling I am Hady to appreciant? Why do you expect grantede of me? Because you ddn't bank my head in the process? You probably would have - if my head, substant, hadrit been valuable to you."

f your band, unbrokes, bash's been valuable to us, we would have left you in paces. You know that and you know the necessity that dove us. We have explained it carefully. If you were simply trying to get away, I would understand, but your method of antempted secure might have dontryed our project and parhaps us as we e of our actions and be appalled. If that were so, what do you think would have

Morrison's lies tichanned and he looked utiles. 'I could think of no other way of excenter. You would of driving necessities. My needs drive me, too.'

*Albert, we have tried every transmable way to persuade you to help us. There has been no force, no threats of force, no uppleasanness of any kind after you had arrived them. Just's that trace "I suppose so."

"You suppose so? It is true. But it has all failed. You still refuse to help us, I think: "I still refuse and I shall continue to refuse."

"Then I am forced, very much against my will, to take the next step.

A bit of fear stirred within Morrison and he felt his heart skip a beat, but he tried desterately to sound defaut. "Which is?"

"You want to eet home, to eo back to America. Very well, if all our neroussiveness fails, you shall return."

"Are you serious?" "Are you surprised?"

"Yes, I'm surprised, but I accept. I take you at your word. When will I leave?

"The very moment we settle aron the story we're coine to tell."

"Where's the problem? Tell the truth."

That would be a little difficult, Albert. It would enhances my government, which would have to deep having given permission for my action. I would be inserious treable. It would be unreasonable for you to expect me to do that.

"What can you say instead?"

"That you came here at your own request, in order to help us with our projects."

Merrien shock his had vehancedy. That would be at lasts a difficult for use a admining the kintapping would be for you. These may be dee good new days, be old habs die had and dae American public would be more data a link sequicious of an American scientist who wont to the Soviet Union to help shear with their projects. Old competitions remain and Have my reparation to thick of:

"Her I won't allow it. Do you controls I will besitute to tell the truth in full detail?"

"Yes, there is that difficulty," admitted literatorea, "but from my point of view, I would rather you had the difficulty than that I did."

"But, Albert," said Boranova quietly, "do you suppose anyone would believe you" "Of course. The American government knows that you asked me to come to the Soviet Union and that I refused. I would have had to be kidnapped to get here.

Branness und, 'Of course they dd. They wanted you field out as much about minimutation as possible, Yushin going to have to will them your related to be minimutation. All you'll be date you wantched a cabbitumdatego minimutation, which they will consider to have board about the want and about the second as a second bar.

ted the matter in his mind. He said, "Do you really intend to have me in the position of being considered a spy and a traitor by my people? Is that what you're going to try to do?"

What about the i

"That is the one place where we must avoid the trath. We can't mention that,"

"But what would keep me from mentioning it?"

The fact the server wall believ yse. BJ yse accept the existance of minimateriation and yse or eventy by yse accept and yse ac Merries starts at Reserve security by and y back with its and by hair (11) is to explained, two. You can y will up date the interve security by und y you can security does do sone, as otherwise you would have to explain why be is still in a contrast why perhaps, be has come back to life. You can you can the date during for you can poster have been at the date during for you can poster recovered with my help used to be exactly moves on that you can poster have been at the date during for you can you can be added with the date during for you can you can be added during for you can poster recovered with my help used to be exactly moves on that you can poster recovered with my help used to be added during for you can poster the date during for you can you can be added during for you can you can you can be added during for you can you can be added during for you can you can be added during for you can you

That is a problem that versities were, Abber, and it is clearer of you to wer it. Aher all, we are usualing you back within a few days of your actives. That well do you as bane, Abber, Baing a data and you to be a database. We brought you have in high hopes for our poor Shapines, but is no time at all it rando of that your views were includent timesees and, with bitter database.

"Don't play the innocent. Natabus. You can't do that," He had turned white with anser.

"But it makes sense, doesn't it? Your own peers don't take you seriously. They laugh at your views. They would agree with us that your neurophysical suggestions are incol

on nonsense. We'd be a little embarrassed for having been so credulous as to take you seriously, but it was really Shapirov who thought highly or you and he was, unbeknown to us, on the edge of a stroke and total mental brankdown, so that one could scaredy blance him for his mad admin Morrison's line trembled. "But you can't make a clown out of me. You can't min my reputation so."

"But you're hine and you know you're hine. Natalya, Have you no code of ethicy? Can a respectable scientist do this to an honorable brother scientist?"

"You were unmoved by abstractions yestenday, Albert, and I am unmoved by them today in consequence."

"Tm sure it was," said Denhner. "How you spectred it out this time, Natada, I can't say, but I knew you would. -- And I most contratalne you, too, Albert. It took her quite a bit longer than I t Morrison could only state at the two vacantly. He foll as though he had wallowed an icicle whole - one that didn't melt but that, instead, reduced the temperature of his abdomen to the finering point

"Someday scientists will discover I was right. How will you look then?"

Morrison stared at the woman, who was looking at him with such mild concern. He whistered. 'I accert the alternative, Boranova looked at him for a long minute. 'I do not wish to be mistaken, Albert. Put your agreement into clear language. "It's either consent to be miniaturized or consent to be destroyed. Jus't that it?"

Be : F. Downey-Charle Silvering-Prince Silverinis Desire planet Silvienes Panesis 5200 page 528 520. 520 Desiration Silvien

"We may all be dead by them. Beided, you knew that that is not the way it works. Funz Anton Mesmer, though be discovered hypotoism, was considered a frand and a charlann. When James Binid rediscovered hypotoism, be get the credit and Mesmer was etill considered a frand and charlann.

Because a threat out har liss. "That's a hardware of mention is. I needer that you look at it this way. Either you asses to help us by noon or you will be on a classe to the United States by 2 n.m. What do you say? It is now nearly 11 a.m. You have over an hour to decide.

Turk reases is cet. Why do you refees to summa into ac operanem of minimization which may enable you to considiad by your barries and which is likely to increase your located by the index of magnitude? Such refeat (as only also findeply our own central incredely fut your thereis are wrang, that you are other a food or a final or bob, and that you don't van this considiad by byoard is don't, as it would be if you majored yourself to minimization.

'Hat I can't eo home on your terms.' "But what is the alternative?"

Certainly, he was shivering. CHAPTER 7 - SHIP

"That is not so."

To you expect us to blive that you rollson initianization is simply because you are fightened? That you turn down a chance at laxeviology, givey, fame, vicatory, viadication after yours of scores - will because you are scaned? Come, we can't thick so little of you, Albest. It makes much more usus to blivey you are a final and so we will have no horization in usying you are.

"Americans won't believe a Soviet libel against an American scientist.

unnually, except for those papers who might not object to the tastelessness of bringing back that old joke for one more spart of laughter to follow you to your grave

Morrison said in a whisper, "Natalya, why do you do this to me?"

TT I am doing nothing. You are doing it. You want to go home and since we've failed to get you to accept miniatrization, we have no cheice bet to agree. Once, thengh, we agree to send you home, then, step by step, everything else must legicilly follo

"But in that case, I can't go home. I can't have my life destroyed beyond repair."

Morrison shook his head in deenair. "I can't eo home." "But you must. Unless you are willing to help us, which you're not, you can't stay here

"What's the use? An hour won't change anything. Til be miniaturized." "We will be miniaturized. You will not be alone." Boraneya reached out and touched a contact on her desk. Durhney emered. "Well, Albert. You stand there looking so sad, so crumpled, that it strikes me you have decided to help us." Boranova said. "You need make no sandonic remarks. Aftert will help us and we will be grateful for his help. His decision was a voluntary one."

at who would care, Albert' Year entanged with' Year childran, who so longer lozer you and can always change their more anyway' Your university, which is firing you? Your colleagues, who hagb at you? Your government, which has abanded you? Take base: No one would can. An initial mocons laugh across the whole commy and then you would be forgotten forever. You'll dis without an obinary notice

No voyage is dangegrous to the one who waves good-live from the shore.

-- Deathney Semior

Morrison felt numb all through lunch and yet in a way the pressure was off. Them were no determined voices pressing on him, no intensity of explanations and persuasions, no smiles of intent, no heads closing in

Of course, they made it quite clear, in a cool businessilike way, that he would no longer leave the Gosto till the deed was done and that from the Gosto there was, of course, no escap

And then every once in a while a thought switted into his mind. He had actually arreed to be miniaturized?

They took him to a none of his own in the Gentro where he could view book-films through a viewer provided for his personal ase - own English-Inagrage book-films if he warned the inner familiarity of homes to puss the start for homes. So he sat there with a book-film surrounding through the viewer empty do his spectral somehow it is this his mind non

He had actually agreed to be miniaturized?

He had been told that he could do as he pleased until someone came for him. He could do as he pleased, that is, provided he did not please to leave. There were get The feeling of turve had, Morelson was aware, much diminished. That was the use of numbers and, of course, the more one repeats a summer is one's mind, the more it isone manalay, Bo had actually agreed to be miniantized. The more it rang in his mind like the toiling of a boll, over and ever, the more of it faded. And left a more secure of numbers and its place.

He was distantly aware that the door of his room had opened. Someone, he presumed daily, had come for him. He removed his viewer, lifted his eyes languidly, and, for jost a moment, foit a mild spati of interest.

It was Sophia Kallinin, looking beautiful even to his bleared senses. She said in English, "A good afternoon to you, gentleman."

He grimaced slightly. He would rather hear Russian than English delivered with quite so dietorted an accent.

He said sufferily in Russian, 'Please speak in Russian, Sophia

His Russian might be as distrossing to her, for all he knew, as her English was to him, but he didn't care. He was here by their doing and if his shortcomings toubled them, that was their doing, too. She shragged slightly and said in Russian, "Certainly -- if that is wh

Then the stard at him for a thought if while. He not that stars easily enough for, at the moment, be did not much can what be did and looking at her was not much different to him than looking at somehing does would have been - or looking at nothing would have been. The momentumy improvision of beauty that had come with her emance had fado She said finally, 'I understand that you have now agreed to accompany us on our venture.

'Yes Ihave.'

"That is good of you. We are all grateful. In all honesty, I did not think you would do so, since you are an American. I apologize

Morrison said with a far-off touch of regret and anger, "The decision to help you was not voluntary. I was prevaided -- by an expert

"By Natalya Boranova?"

Morrison nodded.

"She is very good at persuading," said Kaliinin. "Not very kind, usually, but very good. I, too, required persuasion." "Why you?" said Morrison.

"I had other masons -- ones that were important to me."

'Indeed? What were they?'

"But unimportant to you."

There was a short uncomfortable pause. "Come, the task I have been eiven is to show you the ship." said Kalimin.

"The ship? How long have you been planning this? Have you had time to build a ship?

The specific pages of builty Bajarity's has from while'd Generation and, it was mean for other, simpler pappose, but it is the suby flag we have there a cause. - Come, Abert, Nady, Hidek is WI be vise for your become acquated with it, so it, for it, it is possible that the down-to-catabase of the submitting will recently you to the sub."

Morrison held back. "Why must I see it now? Can't I have time to grow accustomed to the whole subject of personal minianerization?

"That is folded, Albert. If you had more time to it in your room ad bettod, you would have more time to find your uncentainty. Bookies, we have no time. How long do you suppose we can allow Shapires to lis them deteriorating, with lis thought dimitishing with each moment? The dolp analysis to its?

"Tomorrow morning," mattered Morrison, his throat dry. Foolidhly, he looked at his watch.

'You have few enough hours, but we'll keep track of the time for you so you need not consult your watch. Tomorrow morning the ship enters a human body. And you will be on the ship."

Then, without warning, she slapped his check hard. She said, "Your eyes were beginning to turn upward. Were you planning to faint"

Morrison rubbed his cheek, grimacing with pain. 'I wasn't planning anything," he mambled, "but I might have fainted without planning it. Have you no gentler way of braiking the new?" "Have I really caught you by surprise, when you already know that you have agreed to be miniaturized and it is self-evident that we have no time?"

She gestured peremptorily, "Now come with me."

And Morrison, still rabbing his check and seething with rage and humiliation, followed

It was back to the miniate intion area - back to the bury people, each concerned with their own affairs and paying no attention to one another. Through them all, Kullinia walked with an erect carriage and maintained the attencentic air that arises automatically when all defer to you.

She was one of the loading links. Monison could see this hand still review liskshow to his check, which the loading and which he bestand to eccesse) and all who envoyd or even neural her much added their based, in a kind of rudinentary how and summed a links backward, as though to make use nor to intende her much. No one acknowleded Merrison has

On, on, through one room after another -- and everywhere the feel of pent-up energy held in bare check.

Kallinin must have sensed it too, familiar as she must be with it, for she mattered to Morrison with a certain prick, "There's a solar power station in space, a major part of whose output is reserved for Malenkigrad." And then they were upon it before Morrison had a true chance to malice what he was kooking at. It was not a very large room and the object within it was not of improvious bulk. Indeed, Morrison's first impression was that it was a piece of artwork.

It was a streamlined object not much larger than an automobile, certainly shorter than a stretch limousine, though taller. And it was transparent!

Automatically, Morrison reached out to feel it.

It was not cold to the truck. It full watch and almost moist, but when he removed the hand, his fineerites was not effect dry. He triad it assists and as he may his fineerities across the surface, they weened to triad slightly, but they left no evency mark. On immedia, he branched uson it. These was the shadow of condension moistum on the transition.

'It is a plastic material,' sold Kallinia. 'But I don't know its contrologion. I'I know, its would revolubly come under the head of classified information anyways, but whatever it is, it is erroneer than enel - toucher and more reviewant to shock - kiloeraan for kiloeraan.'

"Weight for weight, puttings," said Meritons, for the moment his scientific curiosity drewning his unaziness, "but such a thickness of placic material could not possibly be as strong as the same thickness of steel. It could not be as strong, volume for volume

Yee, but when are we going? and Kählen. Then will be no possent dimensional index and oncide the shipe, then will be a manuscide or equivary of mon. Dury additional lings, and the shipe or a straining but with a strain or equivary of mon. Dury additional lings, and the shipe or equivary of mon. Dury additional lings, and the shipe or equivary of mon. Dury additional lings, and the shipe or equivary of mon. Dury additional lings, and the shipe of the strain of the strain of the strain of the shipe or equivary of mon. Dury additional lings, and the shipe of mon. Dury additional lings, and the shipe of the strain of the strain of the strain of the strain of the shipe of the strain o

"Will it hold a large enough crew?" said Morrison, peering inside.

The well. It is very connect, but it can hold six and we will only be first. And it contains a surprising answard eductory. Not as much as we would like, of course. The original plans - But what can we do? These are always messages for economy, even unwarranted ones, in this univer work?

Morrison said with a twinge of strong unausiness, 'How much pressure for how much economy? Does overything work?'

Towary to a feet the half into New to be write the half into New t ments, cycling equipment, elaborate food and air supplies, anything other than quite simple devices for excretory fi "Who'll be at the controls?"

izations less difficult. Hidne any part of the truth would be unscientific, unethical, and danearous. Don't you see that -- since yo

"Adady Dethesy?" "You seem surprised."

"I don't know why I should I preserve he's cardified."

Templerity, He's in explorating design address and he's specing and the sequence of the sequen

Morrison said stiffly, 'I have no way of knowing what the United States may have or may not have in unusual devices

Tam sure they don't. Derhnev is an unusual person, for all his love of presenting himself as a boor. He is a descendant of Semyon Ivanov Derhnev. You have heard of him, I suppose."

Morrison shook his head

Tantly?" Kilinity voice surred (sy. The is only the famous explorer who, in the time of Peer the Genet, explored Sheria to its assessment continuer and usid there was a seretch of uso spanning Sheria and Neth America decades before Ying. a Date in Russian employ, discovered the Beeing Static - And you don't know Dechaese. That's so America. Usines a Westmere did to, you arere hand of it."

Dan't we insuls everywhere, Sophia, Harvest endied exploration. Then are many American explorer that I don't have - and that you don't, either.'' He shock his flager at her, again remembering her shap and rubbing his check once arene, "This is what I mean. You find things to its food have - and that you don't, either.'' He shock his flager at her, again remembering her shap and rubbing his check once arene, "This is what I mean. You find things to its food have - and that you don't, either.'' He shock his flager at her, again remembering her shap and rubbing his check once arene, "This is what I mean. You find things to its food have - and that you don't, either.'' He shock his flager at her, again remembering her shap and rubbing his check once arene, "This is what I mean. You find things to food have - and that you don't, either.'' "Serryon Dethney was a creat explorer - and not inconsequential."

'Trn willing to admit that. I am glud to learn of him and I marvel at his achievement. But my not having heard of him is not a fit occasion for Soviet-American rivalry. Be advanted of

Kalling's even full, then lifted to bit check. (Bad the left a busise there? Monison wondered.) She said. 'I'm sorry 1 struck yes. Abbert, It nood not have been that hard, but I didn'y ware you to fair. At that moment. I full I would have no nationce to dual with an unconscious American. I did let univerified anore reside me.'

'Til grant you meant well, but I, too, wish you had not struck so hard. Still, I will accept your apology."

"Then let us get into the ship."

Moreion managed a smile. Somehow he felt a little bener dualing with Kalinin than he would have with Duzhaev or Konev - or even Boznova. A prety woman, still quite young, does samehow distanct a mark mind from his troubles more effectively than most things would. He said, "Amoty you afraid I might try to suborage it?"

She rest a hand on the hull as the moke and resumably closed a contact, though Meerison didn't see how it was done. A door - a restander curved at the oles -- orened. (The door's own odes seemed to be double. Would it also act as an air lock?)

The opening was compact. Kaliinin, entering first, had to stoop. She held out a hand to Morrison. 'Caroful, Albert.'

Morrison not only stooped, but turned sidewars. Once inside the shits he found that he could not ouise stand unricht. When he bunneed his hand sentity, he looked up at the culling, started

Kallinin said, "We'll be doing our work sitting down for the most part, so don't be concerned about the ceiling."

"I don't think claustrophobes would like this."

"Ane you classrophobic?"

Kallinin nodded her relief. "That's good. We have to save space, you know. What can I tell you?"

Morrison looked around. There were six sears, in pairs. He sat down in the one nearest the door and said, "These are not exactly roomy, either."

"No," admitted Kallinin. "Weight lifters could not be accommodated."

"It is - but it harrows to be my life study. Nataba will sit behind me. She will be the captain of the expedition. She will make the decisions.

. . . He said in a muffled voice, "There is only one man, then -- Yari Konev -- who was miniaturized and deminiaturized and was unharmed by the process."

"Then judge for yourself, Albert. Do you think we would take the ship into miniaturization without a final usting -- with and without human beings aboard? This ship was n

At once Morrison straggled upward to get out of his seat. "In that case, if you don't mind, Sophia, I want to get out before it is tested with human beings abourd."

"Whatever kind are necessary. Obviously, those can't be medicated in advance. As for you, you will sit to my right."

Would that he because he is a stoic? Would he feel it would be beneath the dignity of a hero of Soviet science to complain?"

'Yet there may be individual differences. Yeri Konev survived unteached. Pyor Shapirov did not -- quite. "That had nothing to do with individual differences," and Kalimin impariantly

rison said, "Obviously, this ship was built long before Shapirov went into his coma."

'O' course. W/w bee planning to have minimized planned indu bing found for a long cours. That would be decauged with a bind to be a long course between a bind by the changes of the state of the state

inturized, empty, during the course of this past night -- not to a very great extent, but enough to know that all is well

Morrison was still studying the interior of the ship. It seemed bars. Detail was surprisingly difficult to make out in the situation of transparency-on-transparency and minimutation of the old-type - ondinary, but microscopic - component

He said, "There will be five on the ship: you and I, Boranova, Koney, and Dechney."

"What kind of decisions?"

"And be mention "Nothing of the sort was reported."

"We can't really tell, can we?"

"That's right."

"And what will each of us be doing?"

"Due't be foolish. We are not hances of Soviet science and the one you seak of certainty in't. We are human beines and scientists and, in fact. If there were are disconfiort that we full, we weld be convolided to describe it in full detail, since it might be that with modifications of the rece

*Adady will control the days, Delvinedy, he knows how to do that. It's the child of his hands and mind. He'll be in the left from sour. To his right will be note made, who has a complete map of the neurocirculatory pattern of Shapitory's brain. He will be the plice. I will sit behind Adady and I will control the electromagnetic pattern of the ship's variation.

Memory new and managed to diff his position slong the narrow side on the door side of the seast and move one was the ACL. He had been in Konev's user and nove he was in what would be his own. He could field his heart posseding as he imagined himsed' in that scene sure on the following day, with the minimutation possess in progress

We due that you reconstruct objects by afficient links, a dow reconstruct objects by ensined edges, a molecule scownizer objects by surface electromatentic tanters. If why exists to make our you as a minimated object among molecules, we must have the resonance and an inforder tanter than fors."

"But, Albert, it's too late."

Look out the thio at the room. You haven't once looked outside since you ext in, which I surrow, was a rood thins. But look out now. Go ahead. The walls are transmurant and the rescess is complete for new. Hease! Look' Morrison, starfied, did so and then, very slowly, his knees best and he scand himself again. He asked (and even as he did so, he knew how foolish he must sound), "Do the ship's walls have a magnifying effect?

"No. of course not. Everything outside is as it always is. The ship and I and you have been miniaturized to about half our linear dimensions."

Morrison felt divrinese ne him and he berr his head between his knew and brushed slowly and deeply. When he lifted his head again, he saw Kalinin watching him thoughtfully. She was standing in the narrow aide, leasing slightly against a sur's armees to allow the coiling to clear her has

"You might have failed this time," the said. Th world not have disturbed me. We are being deministration how and that will be more time-consuming than the ministratization, which took no more than three or fore ministers. It will take an how or so for us to get back, so you will have ample times to recover without telling me, Sophia

"On the contrary," usit Kalinia. "It was as act of kindness. Would you have entered the deja as freely and as easily as you did if you had supported that we would be minimatized? Would you have inspected the deja as cosily if you had known? And if you had been articipating minimatization, would you not have developed psychogenic symptoms of all sort?

Morrison was silent. Kullinin and "Did you feel satebias? Were you even store that you note being ministerioof?"

Morrison shook his head. "No." Then, driven by a certain shares, he said, "You've never been miniameteed before any more than I have, have $\operatorname{vost}^{\operatorname{pr}}$

"No. Before this day, Koney and Shapiroy have been the only human beings to have undergone miniaturization."

"And you weren't at all apprehens She usk, "I wouldn't up that I was unaway. We know from our experience with space rared that, as you usil earlier, there are inflivided differences in reaction to unusual environments. Some astronauts offer opiodes of nason under zero gravity and some do not, for instance. I couldn't be sure how I would react. - Did you feel nason? "I didn't until I found out we had been miniaturized, but I suppose feeling queuxy now doesn't count. -- Who planned this?"

"Nataba."

"Of course. I needn't have asked," he said drily. "There were reasons. She felt we couldn't have you break down once the voyage began. We couldn't be expected to deal with hysteria on your part once we began miniamizing." "I suppose I deserve that lack of confidence," said Motione, his eyes looking away in embarasomere from those of Kälinin. "And I imagine the assigned you to come with me for the precise purpose of distracting my attention while all this was going on.

"No. That was my idea. She wanted to come with you herself, but with her, by now, I thought you might be anticipating trickery."

"Whereas with you, I might be at my case." "At least, as you say, distracted. I am still young enough to distract man." Then, with a trutch of bitterness. "Most men."

Morrison looked up, even narrowing, "You said I might be anticipating trickery." "I mean, with Natalya."

"Why not with you? All I see now is that everythine outside seems enlared. How can be sure that that is not an illusion, something designed to make me think I have been minimarized and that it is hardess - merely so that I use easietly into the doi tomorrow?"

"That's ridiculous, Albert, but let's consider something. You and I have lost half our linear dimension in every direction. The strength of our mancles varies inversely with their room-sections. They are now half their normal blicks ction and, therefore, the strength they would normally have. Do you see what I mean? Do you and

"Yes, of course," said Morrison, annoved, "That is elementary," "But our bodies as a whole are half as tall, half as wide, and half as thick, so that the total volume - and mass and weight as will - is half times half it mes half or one eighth what it was originally. - If we are miniaturized, that is." "Yes. This is the square-cube law. It's been understood since Galileo's time

Ticany, but you haven't been finishing about it. If I wave to try to lift you now, I would be lifting one eighth your normal weight and I would be doing to with my muscles at one quarter their normal strength. My muscles compand to your weight would be twice as strong as they would appear to be if we were not miniatational.

And with that, Kaliinin thrast her hands under his ampits and, with a grant, lithed. Up he moved from his seat She held him so while the gasped rwice and then the lowered him. 'He not easy," the cald, parting a bit, 'het I could do it. And since you may be telling yourself, 'Ah yes, but this is Sophia, probably a Soviet weight lifter,' then do it to me."

. Kaliain seated herself in the seat before him and held out her arms to either side and said, "Come, stand up and lift me."

Merrisen rose to his fast and into the aids. He moved forward, surred, and faced her. The dight bending enforced on him by the low ceiling made it an uncomfortable position. For a moment, he hestated.

Killisis said, "Come, size me under the arms. I use desdrant. And you needed be concerned about possibly maching my breasts. They have been touched before this. Come - I'm lighter than you are and you're stronger than I am. Since I have lifted you, you should have no results at all lifting me." Nor dal ho. Ho conduity lift with his full energish bacause of his digit, ascendenable study, hos has ascendenably applied the free he judget, through your of experience, would be suitable for an object her size. She floand upward, however, almost as though do worse wighted so. Despite the fact that had how searching papeard for the possibility, he denoted

"Do you consider that an illusion?" Kaliinin asked. "Or are we miniaturized?"

. "We are minianarized," said Morrison. "But how did you do it? I never saw you make a move that looked as though you might be using "I didn't. It's all done from outside. The ship is equipped with miniaturization devices of its own, but I wouldn't date use them. That would be part of Natalya's job."

And now the dominiaturization is being controlled from outside, too, isn't it?" "That's right."

"And if the dest s gets slightly out of hand, our brains will be damanged as Shapirov's was -- or worse."

"That's not really likely," said Kaliinin, exerching her legs out into the aids, "and it doesn't help to think about it. Why not just rulax and close your eyes?" Morrison persisted. "But damage is possible."

'Of course it's possible. Almost anything is possible. A three-networ-wide meterories may entite two minutes from now, penerate the meannain shell above us, flash into this room, and deerroy the ship and us and perhaps the entite project in a few flassing seconds. - But it's not likely.

Morrison crafted his head in his arms and wondered whether -- if the ship started warming -- he could feel the heat before his brain proteins denamed.

Well over half an hour had massed before Morrison full convinced that the objects he could see outside the ship were shrinking and were receding rescentibly roward their mernal size.

Morrison said, "I am thinking of a parados

"What's that" said Kalimin, varmine. She had obviously taken her own advice about the advisability of relating.

The objects outside the ship seemed to grow larger as we shrink. Ought not the wavelengths of light conside the ship also grow larger, becoming barger in wavelength, as we shrink? Should we not see everything conside run redshid, since them can searcely be enough shravitoirt conside to expand and replace the shoute-wave visible light?

'If they shrink in wavelength, they must gain energy."

Kallista uså, Tryse coskl es the light væres coské, far voali isked be bor they wald isked be bor they vand apperto yon. But yau den't. You see the light væres coly after they's entered the drip and i regissed opp your retur. And as they enter the drip, they cose usder the influence of the minimatization field and announcinally drink is vandength, to that you ee the vare stangth is inde the drip exactly as you would see them considered

The state is a state in the state is a state 'But gravity changes. It becomes weaker in here."

"The strong interaction and the electroweak interaction come under the umbuilts of the quantum theory. They depend on Planck's constant. As for gravitation?" Killaith througged. "Depite two curraties of effort, gravitation has never been quantized. Finally, 1 thick the gravitational change with miniarizations in vidence enough that gravitation cannot be quantized, that it is fundamentally nonquantum in nature. Teach believe that," said Montion. "Two comaries of failure can menty mean we haven't managed to get deep enough into the problem yet. Supervising theory nanty give us our saided field at last." (It relieved him to discuss the manne. Sarely be couldn't do so if his brain were having in the last.)

andly down? wall Kallain, "Sell, Shapirev agend with yes, I finish. It was his mation that near we field Plack's constants to the speed of light, we would not only have the granical effect of minimizing and dominantizing in an overstubly energy-low manner, but that we would have the homorical effect of baing able in work on the const theory and relativity and finally have a good unified field theory. And probably a simpler one than we could have imagin

"Muche," said Marrison He (Ida') know exceeds to comment beared that

"Shapirov would say," said Kaliinin, warming to the task, "that at ultramini

"It's a beautiful vision," said Morrison, ravished

"Then you know what we're looking for now, don't you?"

Morrison nodded. "All that -- if we can read Shapirov's mind. And if he really had something them and wasn't merely dreaming." "Isn't the chance worth the risk?"

"I am on the point of believing so," said Morrison in a low voice. "You are terribly cos rincing. Why couldn't Natalya have used arguments of that sort, rather than those she did use?

"Natalya is -- Natalya. She is a highly practical person, not a dynamer. She gets things done."

Merrison studied Kalinin as the sat, now in the seat to bis left, looking studiet shead with an abstracted look that give her profile the appearance of an impractical dramer, at that - bet perlaps not one who, like Shapitor, dramed of comparing the Universe. With her, it was something closer He said. "Your unharenness is not my business. Sorbia, as you've said -- but I have been told about Yuri."

Her eyes flashed. "Arkady! I know it was he. He is a - a --" She shook her head. "With all his education and all his genias, he remains a passant. I always think of him as a bunded serf with a vodica bortle

T think he's concerned about you in his own way, even if he doesn't excess himself portically. Everyone must be concerned,"

Kallinin stared at Morrison flexcely, as if holding her words back.

He prodded her gendy, saying, "Why dest you sell me about it? I think it will help and I am a logical choice, being the consider of the party – I assure you I am trastroothy."

Kaliinin looked at him again, this time almost granefully.

"Yuri!" she spat. "Everyone may be concerned, encept Yuri. He has no feelings:

"He must have been in love with you at one time."

"Must he? I don't believe it. He has a - a - " -- she looked up and spread her hands, which were shaking, as though grouping for a word and having to settle for something inferior -- "vision." "We're not always masters of our own emotions and affections. Soobia. If he has found another woman and dru

"There's no other worms," and Kalini, frowing, "Notel II: wor that as an excess to kide behad? IIi loved ne, if at all, only absurdly, bacease I was also involved and the project, so that he dath have to low mach sins dalping with nes. A key as he had this project fresh ju hand, be dath mind having me -quiety, anotherwisely - at odd moments

"Nood not Iff every moment of time. I told you he has a vision. He plane to be the new Newton, the new Electric contract contract of the annual law and everyone else will be commentary?" "Might that not be considered an admirable ambition?"

Nor when it makes him secretice encrypting and everyone oles, when it makes him deep hie own child. If What do Immer? I can be neglected, denied. I am an adult, I can take care of myoul? But a boby? A child? To desp her a fuber? To outsou her? Yo reject her? Now world distance him from hie work, the world make damands on him, the world consume a few memory of tem herr and herr — who invision he is not the fuber?

"Yet I have a feeling you still love him."

"If I do, that is my curse," said Kaliinin bitterly. "It shall not be my child's."

"Is that why you have had to be persuaded to undertake this miniaturization?"

"And work with him? Yes, that is why. But they sell me I cannot be replaced, that what we may do for science lies far above and beyond any conceivable personal feeling - any anger, any hate. Besides ---"Besides?"

esides, if I abandon the project, I lose my status as a Soviet scientist. I lose many privileges and perquisites, which do not matter, and so does my daughter -- which matters a great deal."

"Did Yuti have to be persuaded, too, to work with you?"

The O' Concess not. The projects is all be known and see. He does not look at max He does not look at

Merrison felt himself tremble. "Don't talk like that," he said. "And what would harmen to your dauehter in that case? Did Natalya tell you that?"

"She did not have to. I know that without her. My daughter would be maned by the state, as the child of a Seviet marry: to science. She might be bener off on." Sophia passed and looked around. "But it's beginning to look quite mernal out there. We should be out of the ship scon."

Morrison shraeeed.

"You will have to spend much of the test of the day being medically and psychologically examined, Albert. So will I. It will be very being, but it has to be done. How do you feel?"

'I'd foel better," said Morrison in a burst of honesty, 'if you hadn't talked about dying. - Listen' Tomorrow, when we make the trip into Shapirov's body, how far will we "That will be Natalya's decision. To collular dimensions at the very least, obviously. Parhars to molecular dimensions."

"Has anyone ever done that?"

"Not to my knowledge."

"Rabbits? Inanimate objects?

Kaliinin shook her head and said assin. "Not to my knowledge."

'How, then, does anyone know that miniaturization to such an extent is possible? Or that, if it is, any of us can survive?

"The theory says it is and that we can. So far, every bit of experimentation has fit in with the theory."

"Yes, but there are always boundaries. Wouldn't it be better if ultraminiaturization were tosted on a simple bar of plastic, then on a rabbit, then on a -ns would have to be dribbled out over months and years. We have no time! We must get into Shapire

'Yes, of course. But persuading the Central Coordinating Committee to allow the energy expenditure would be an enormous task and such a "But we're going to be doing something unprecedented, crossing into an untested region, with only the maybes of theory to --

fir: #Domerschilt

"Exactly, exactly. Come, the light is flashing and we must emerge and accompany the waiting physicians."

But for Morrison the marginal exploria of a safe dominiaturization was scoping away. What he had

The terror was returning.

The createst difficulty comes at the start. It's called "entine reads."

-- Dephney Senior

a long -- and tedious -- medical exam, he joined the four Soviet rese echers for dinner. The Last Supper, Morrison thought grimly Sitting down, he burst out, "No one told me the results of my examination?" He turned to Kaliinin. "Did they examine you, Sophia?"

"Yes, indeed, Albert."

"Did they tell you the results?"

"Trn afraid not. Since it is not we who pay them, I suppose they don't feel they owe as anything." "It doesn't matter," said Denhere jorially. "My old father used to say, Tad news has the wings of an eagle, good news the legs of a doth. If they said nothing, it was because they had nothing bad to report.

"Even the bad news," said Boranova, "would have been reported to me - and only to me. I am the one who must decide who will accompany us."

"What did they tell you about me?" asked Morrison.

'That there is nothing important wrong with you. You will be coming with us and in twelve hours the adventure will begin.'

'Is there arything unimportant wrong with me, then, Natalya?' "Nothine worth memionine, excert that you display, according to one doctor, a 'writing American had tempor,"

"Buht" said Morrison. "One of our American functions is that of being bad-tempered when doctors show a typical Soviet lack of concern for their patients.

Nevertheless, his apprehension over the state of his mind ebbed and, as it tlid so, inevitably the apprehension over his impending miniatarization rose higher

He lapsed into silence, eating slowly and without much of an appetite.

Yari Konev was the first to rise from the dimer table. For a moment he remained standing, leaning forward over the table, a slight frown on his intense, youthful face.

"Natalya," he said, "I must take Albert to my office. It is necessary that we discuss tomorrow's task and prepare for it."

Beraneya said. "You will numember, nicase, that we must all have a read airth's sleen. I don't wish you to forrer the massare of time. Do you want Arkady to co with you'"

"I don't need him," said Koney haughtily.

"Nevertheless," said lloranova, "there will be two mands at your office door and you will call out if you need them.

Koney turned from her impatiently and said, 'I won't need them, Natalya, Tm sure. Come with me, Albert.' Morrison, who had been watching them both from under lowered eyebrows, rose and said, "Is this going to be a long mip? Im tired of being shared from point to point in the Groms."

Morrison knew will be was being suggreicose, but it dich's soon to bother Koney, who responded just as suggreicosely, "I should think a professor would be used to plauging back and forth across a university campus."

Morrison followed Koney on the door and together they transped along the corridor in slonce. Morrison was avare that at a corrain point two guards fill in behaved additional foreneges largeting time with his own. He looked back, but Koney did nor

"What is that?" asked Morrison.

"I still don't understand," said Morrison,

"And you used Shapirov as your subject."

"Astonishine," said Morrison, "If you are serious,

'I should think so -- but I have never heard of this."

Morrison said impatiently, "Much longer, Yuri?"

There is any second and h is now visus to overstamme even the best of them. There thisses but results and they may be viewed only when I decide to allow it. This, for instance." His data hand here well card-for and maximum. Microiron noticed - be midth articles to this work, but not himself results of the for his work, but not himself results and that had been clarify decident for his

Know doub in back. 'It the first ign for in grant in the second and a second in the second and a second in the second and a second a second and a second a second and a second

Know cuid, "This can be viewed at any cross-section." He presed a lay and the brain began to peel as though it ware being continuely diace by an utrachin microson wave being continuely diace by an utrachin microson wave being continuely diace by wated cross-section."

"On the basis of your own paper, Albert Thuse choses the registery you had decided more represent the sourcesh partial goids, with its coded approxaminian of Stapinov/traits as my initial goids, Calculated contex when more or los direct pathways could be found to source goids and them more accurately on the compare and it is to so or more of those contern that we will p

refused to undergo miniametration. Being supped by death, however, is only a small possibility, but if I refuse to undergo miniametration, then I are supped certainly. That is viby I much prefer to risk the former than take the lates

neros. Tirined to be the presen to whem the human brain will finally yield its scents. I will solve, completely, the alternate physiological systery of humanity, perhaps of the Universe – if we are the most advanced thinking divisor, that neist anywhere. So we will work together, you and I, somerree. I want you to be ready for it, so help gaide me by endying carefully the brain waves on

fenze ways the has attempted interference and how often the has succeeded. I don't look at her, I don't speak to her, yet the will not laws an adone. Her imaginary wrangs seen as firsh in her mind as they were when I first broke away. Yes, I do mind her being on the ship with me and I have naid to to Bernarow, but the opy that both of us are needed. Any

Nation on Abort, if without mathematical and a state of the state of t

Knew cal. "This way at the cilitate level. Those want decision as individual sectors and if i consolides, we could follow a since can three-dimensional access a varage to apphient and a constructive and access a varage to apphient and a constructive and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and a constructive and access a varage to apphient and access a varage to apphient access and and access a varage to apphient and access a varage to apphient access and access a varage to apphient access and and access a varage to apphient access a varage to apphient access and access a varage to applient access and access a varage to applient access and access a varage to apphient access and access a varage to applient access and access a varage t

t Shapiro's thoughts and, most particularly, his thoughts on combining quantum theory and relativity so that trips such as ours tomorrow can become routine and we can begin the study of the brain in al

Thy accordible good formas, 1.6d. Or purhaps it was not good formas, but memby inevitable. We all have our small variation and it waved to Shapirev that his brain was worth preserving in detail. Once I begue working on the field ander his discriber - for these was the feeling that we night soundard years to explore animal brains at least - his inside on heving his cons brain analyzed combine

"Well, m," stal Knew, glancing at the book. "In comparison with the total code, that book is cody a small paraphile. However, it does hold the basic stalence, on to spaik, of Shaptory's neuronic structures and I was able to use it as a gaide by which to direct a compare groups and nat mapped it out is granter dual. It took months for the boot and non-advanced comparer we have to do the job.

Knew nield falger, 'Ab. The noise is apparent when year and is and queer, bet net when you are in minimuted queer. I was the first to make the two to when I was minimuted and I sported it. We still dark lasser why the minimutation field scenes to map scand waves when it decess it may light waves, but then we append to the process as we go on.

numper, "What is friendelip? When I joined the project, I found her henry, the had joined a month outlier. We worked together, we ware new and unstited together. Of course, there was what one neight call friendelip, a physical need for instancy. What of it? We were young and unsure of courselves. It was

"Coldmand What do you inaction Unit or a second and a sec

Tan not. Sto is being unking to benefit. There a miserees. There a low, it is this reviews. It is the human brain in the aberack its undy, its analysis, and all that that minit lead to. The woman was, at best, a distriction - at wome, a destruction. This linds was a having - that I do not ask for - that the sended you into undertaking, no doubt -'

'Of course not. These workshols record a corebral scanning that was carried through three years areo. That was before he had evolved his record notions and, in any case, what I have reserved here is, unfortunately, only the through structure and not the theoreting. Still, the combinements will be invaluable to us in some

At he speak, he demonstrated. "Of Totald offest is in another direction or mote is along any axis. Of T can supply it to any ecourt down to the cellular level, either dowly or, as you sus, quickly." At he suid this, the manual of the brain spead series at and mechanism from a counted prior — discriptopy — so that Mention

Moreion shock lis head. The atrial Leas' guarance that we will be able to determine actual thoughts, even if we find the centers in which thinking takes place. It as though we might much a place where we can hear people's voices, but if we don't know the language, we are still left in ignorance of what they are using?

"Of come it impresses me, bst ... Have a queries. Tody when I washed the rabits being minimuted, there was a pronounced where during the process - and a ramble when it was dominimuted. There was nothing of the ser when I was objected to it - or I would have known what was happening.

"That is a foolish question, Albert. I have no intention of walking you past our destination. When we get there, we will be them. If we are still walking, it is because we are not there yet

"I should think, with all this walking, you might arrange golf carts or something of the sort for the corridors."

"That," said Koney, "in Academician Sharinov - or at least the evence of him," He counted the book and filtered the tases, Pase after tases (all of them, techano) were filled with verabole annaeed in distrammatic fashion.

"This is the basic structure of Shapitor/s brain, translated into a symbolism of my own devising. Fed into the appropriate software, it can reconstitute a three-dimensional map of the brain in intrimute detail on a computer screen."

"I are serious." said Koney. They event my center caver on this task: translation brain structure into vymbols and symbols into brain structure. They invested and advanced this science of combroments."

Tru not surprised. I have published papers on this, but only in the Grenn's own publication - and these remain highly classified. No one candide the Grenn, not even here in the Seviet Union, knows of them.

Koney studied the computer -- which was turned on, as one could tell by the soft whisper of its cooling mechanism -- then pushed the necessary keys. On the screen there appeared the side view of a huma

Koney frowned darkly and a dail flash rose to his face. "Has her madness gone so far as to force her to confide her incoherencies to strangers? If she weren't needed on this project --

'Goads are not necessarily noticed. This discussion may cost me a night's sleep and make me that much less sharp tomorrow when I will need all my sharpness. Is that your inten-

Morrison didn't know why he was mehine the matter. Parhars he felt diminished at feature a task the other so anderly welcomed and he therefore wished to diminish in turn. "Were you never her - friend?"

"No! The child is adsoundedy cared for. I immeting, and even if eventic analysis seemed to indicate I might be the merger. I would refuse all efforts to tie me to the child emotionally, so what would the woman have to vain?"

"We can't know that in advance. The varying electric potentials in Shapirov's mind must resemble those in ours and we may simply be aware of his thoughts without knowing how we are aware. In any case, we can't full unless we go in and sy."

'Anything to allow the muscles to attophy, Albert? Come, you are not so old that you cannot walk or so young that yo

Morrison theoretic ICI score that more scores with his child. I would show off freemorks to caldress his denial of fatherhood

They reached Konev's office at last. At least Morrison assumed it was his office when Konev barked the word "Open" and the door slid smoothly open in response to his voiceprint. Konev stude through first.

. . "What if someone imitates your voice?" asked Morrison cariously. "You don't have a very distinctive voice, you know.

Koney said, "k also scans my face. It will not respond to either separately."

But are the people here so - inquisitive - that they would invade your privacy?

Morrison said with a sudden exchement, "Can you get his theories out of the recorded cerebral structure of his brain?"

"That is bad policy. You will be overtaken by someone else who will publish and who will be granted priority."

Morrison said challengingly, "Then why do you need miniaturization? Why do you need to send ships into the brain?"

Koney turned to a computer and, with practiced flips of his wrist, inserted five large discs. "Each one of these," he said, "can hold all the information in the Central Moscow Library without crowding. It is all devoted "An overreducts to fill me." and Marrison informatic "that was could transfer all the information of all Oktobergy's being into the back was have been?"

Morrison, entranced, asked, "Can you show me how it works, Yuri?"

"In that case, you will have to be ready for possible disappointment." "Never," said Koney with the uture

"As long as we don't discover fatal aspects," mattered Morrison. "Are you aftaid of nothing, Yuri?" 'Tm aftaid of not being able to complete my work. That would be true if I died tomor

"Does it bother you that Sophia will be undergoing miniaturization with you"

"If you don't remember her first name, it may help if I refer to her as Kaliinin." "She is part of the group and will be on the ship. Yes." "And you don't mind?" "Why should I?" "After all, she feels you have betrayed her

"I have no doubt she would like to saddle me with the responsibility, but it won't work."

He storged and stared at Morrison intently, then said, "Well?"

'On what basis have you chosen the routes'

"Well, what?" "Does none of this improve you?"

Koney frowned. "What?

'Trn sorry. She didn't sound incoherent to me."

"Friend?" Koney's face mirrored his a

"She says --"

"But it left something behind. A child." "That was not my doing." And his month closed with a snap.

"Have you considered genetic analysis?"

"You are being unkind to her."

"She did not," intedected Morrison

"No, of coarse not," Morrison said quietly. "Then it is samly here. You have no idea in ho

"Tm sorry. I didn't mean to upset you so." fir i Elbourovia

Koney said, "I have it on microfilm, of course, but there are certain conveniences to having it in a printed volume." He parted the pages almost losingly.

"And if you have a cold "One time when I had a bad one, I could not got into my office for three days and I finally had to have the door opened mechanically. If my face were builed or scared by accident, I might also have trauble. Still, that is the price of socarity." Re - E. Durannes-Jihark-Menian Princes-Mileliah Dedambaars. 26 jane Panasis-320 yaars-300-530 Sola - 530 Selandari - 200 sa

Morrison sighed. Sleep?

"What did you mean? Simply to have a quiet conversation? Say, what about all those betravals and days tricks you have committed?" Just a friendly talk?"

Yet on this, his third night in the Seviet Union. Morrison dept.

Knew usid hardshy. 'You had better en. Direaster you here to here your fair of the project by envidant you with a blaze of embasians. Obviously. These failed. You are more interested in rendert rooms. Go, the suards conside this door will take you to the suarters assigned you. You will need to deter Durbary had been vaiding outside Koney's none with the guards, his broad face genering and his large care all but flapping with memimum. After the shadowed instantity of Koney's presentlity, Morrison found himself welcoming Durbary's chanter on all subjects but the morrow's mini-

Morrison remained silest, howing his head slightly against the other's rags. Three out of five on the ship—himself and the two ac-losurs -- would be labering under a sense of unbumble wrong. He wouldend if, on careful questioning, Duthaev and Bernsova would prove similarly disable

Duthere reged a drike on him. This nor vodia, nor a doubel, "he had usid, "his milk and a lattic sugge and flavoring, I code is from the commonsory where his none,! Think, for azimate, because all floors officiation find human beinge more ready replacable frame being under a compositivity. As my father used to any, "To get a human being takes a nonement of glavara, but to get a human beinge more ready replacable frame being under a simulation. It is the care of overpopulation. As my father used to any, "To get a human being takes a nonement of glavara, but to get a human beinge more ready replacable frame being takes a human beinge more ready replacable frame being takes a human beinge more ready replacable frame being takes a human beinge more ready replacable frame beinge more ready replacable frame being takes a human beinge more ready replacable frame beinge more ready repla

The drink was in a can which Montion punctumed. He pouned it into a cup that Dezhnev proffered and it tasted fairly good. He thanked Dezhnev almost cheerily. When they got to Montion() room, Durhnev said, "New the important thing for you to do is to deep. Sheep well. Let me show you where everything is." And as he did os, he rather resembled a large and slightly unkempt mother hen. With a hearty "Good night. Be sure to get plenty of sloep," Durhnev left the recent.

And Merrison step: Among an occur as he worked hisself into his fevenite position - strength down, little generation - being no field down, O course, he had his is deep the last two sights, but he wakkedy gassed that there had here a mild solutive is the copiero which he had posed the drint. Then came the flowght that perhaps Kozev doubli kies as a suddive. Then - nothing,

When he works, he could not even remember baying had any dreams

Nor did he wake of his own accord. Dorbney was shaking him, as cheerful as he had been the evening before, as wide awake, and even as spraced up as it was possible for that animated haystack to b

He said, "Avoids, Clerads America, for 2 is time. You must shaw gad wash. This are from twoods, conductant, thouse, and support the balances. This we determ them myet?. Also a two effects more Add on top of the, are other cliffest for you two end in the conduct you will be full on copoul. They pecually have them, the retres-

Morrison stirred and sat up on the bod. It took him a moment to place himself and to warther the shock of realization that it was Thursday morning and that miniaturization was just ahead. Half an hoar or so hare, when Miterion suppod out of the bathoom again - satisfactority bathed, deied, deadstated, shared, combed, and reaching for his two-piece comton uniform and his support - Denheev said, "Satisfactory elimination, ray half No ce

"Quite satisfactory," said Morrison.

ood? I don't ack out of idle curiosity, of course. I am not faccinated by eccentrate, it is just that the ship is not ideally saited for each things. Better we all go in empty. I dish't trast to names, mywiff. I took a bit of a hazarbe.

"How lose will we stay miniaturized?" asked Morrison.

. 'Perhaps not long. An hour if we are very lucky, perhaps two "But, look," said Morrison. "I can count on a well-behaved color, but I can't so for twelve hours without urinatine."

"Who can?" adead Durhney jorially. Tach uses in the ship is equipped for the eventuality. There is a recess, a removable cover. A buil-in valies, on to speak. I designed it myself. But it will be a emerged and, if you're sensitive, embarrassing. Someday, though, when the emergy-true minimutarization process is a fact, we can belief ocual lines for min nd live in them like tears of old." "Well, list here the candidiss is not sunceccostile candidid," (lis formal it odd that, for a meaner, bit seembarrison delified from face of dash or meaner disability to the dash of a boy to manifold and, therefore, samenda'.

He was in his corum ciches and had engoal into his dispers when Bachace, dressed in dightly larger versions of the same (also with refinances in the creach), sail, "Lat or now go to bunkfact. We will have good food, high calcrise, and low high, for here will be no cating on head the ship. There? He water, of course, and first jacce, but no read bearapped or any high calcrise. night need a drop of vodka now and then. These were a lot of uncalled-for comments about sots and drankards. Albert, Albert, how I am presecuted -- and unjustly, too."

ole breathing -- hyperventilating, perhaps -- into a skimov volume raise the burnidity to maximum? Or would there be suf

en out. Shantow had called his overram a relaw station because of that -- if Yari was to be believed. Well, then, how could be now check if that were working well, when at best he had had the sensation only a few times a

at that. Durb let the dush turtle you. Then is a liter of water in a siny relifyerator under the side of your suit. It is only for drinking. If you get dirty or every or ever

Broakfast was indeed plentiful, but not exactly filling. There was gelatin and custard, thick slabs of white bread with butter and marmalade, fruit ju

The talk over the breakfast table was moderately animated and, for the most nart, dealt with the local chees tournament. There was no mention of the shie or of miniaturization. (Was it had lack to mention the revised?) Morrison did not object to the direction of comment. He even made a few comments about his own adventures as a chess player of marked lack of renown

And then, all too soon, the table was being cleared and it was time. They left for the ship.

They walked in single file, with space between themselves. Durhney was first, then Kalimin, then Boranova, then Morrison, and finally Koney. Anost at ence, Merrison authentood the purpose. They were on view and they were being individualized. Along the edges of the corridor were men and women - employees of the project, obviously - watching negative

They, at least, must know what was going on, even if the rest of the Soviet Union (let alone the world) did not.

entney, in front, waved eagerly to the right and left, rather in the fashion of a kindly and popular monarch, and the rowds responded appropriately, shouting, waving, and calling out hi

Each name was called at various times, for obviously each prospective cow member was known to all. The two women were normalised in their acknowledgement and Konev (as Montion could use when he looked behind him) was, not unexpectedly, moving along, eyes forward and areas

then Morrison was surprised when he distinctly heard the cry, in English, "Herrah, the American?"

He looked in the direction of the convex and waterestically served at able to use a supersonically there was a lood and embraineric about and the works were releved an and? "Harrish, the American?" drawned out all day Merrison from Minnell mubbi to maintain his cardier utilien roliganizes. His had never been the object of mob jubilizion and he took to it immedianely and without touble, waving and grinning multy. His carght Bernarys's gravely amound expression and sure Database pointing the flager at him in an estemations that's-the-American genture, but allowed neither action to distub him

And then they passed out of the late of observers and into the large moun in which Shapirov was rooting in his mental cocoon of coma. The ship was also in the room.

Morrison looked around with actorishment. He said, "There's a camera crew out there."

baself lar beam ay, Marion bught. By now wild be to Hildes by the to Hildes by the conder or vb. Koore had alend to be a a domain. Store you worth to to be a a domain carbolly recorded and dwar an represent acade conders on the 1 might be develoc. Then was own a cancer present when you and I was minimized young), by we lay I out of sign dowary own to balance you worth to beap a domain acade conders on the 1 might be develoc. Then was own a cancer present when you and I was minimized young), by we lay I out of sign dowary own to balance you wort to balance present when you and I was minimized young).

"But if this is a secret project --"

The will not always be seen. Someday, when we have reached full success, the details of our progress will be revealed to our people and to the world. -- Socent, if it seems sense other ration is making progress on its own in the same direction."

Kaliinin said, "Would you willingly give up priority in your own field of research"

Morrison was silent. It was the obvious retert.

Morrison shock his head. "It isn't cood, this reimary concern with rejority. Process would be much faster if additional brains and resources were put on the isb."

Kallinin, noting this, said with a shake of her head, 'I thought so. It is easy to be generous with someone else's money."

Benneya, meanwhile, was tabline to someone whom Morrison indeed to be a resorter, one who was listenine caserly. Morrison transferred his attention and found himself listenine caserly, too.

Bozanova was suying, "This is the American scientist, Albert Jonas Morrison, who is a professor of neurophysics, which is, of course, Academician Konev's field. He is here serving as both an American observer and as an assistant to Academician Konev

"And there will be five who will be on the shirt?

"Yoe, And there will never the so translabiles a free states - or so translabiles and translation to the state - or so translabiles and translation to the state - or so translabiles and translations. Kallinis and Mortisson Abber Ministrations, Kallinis and Mortisson Abber Ministrations

Dothery, tho was saddedy at Martison's side, whopend formuly into list are, "There you are, Albert. You are now an indelbib formate in biosey. You might have imagined and lister that you was a failure, but not so. No one can take from you for the fast you ware the first Associated over to be minimated. Don't your ecomyness work on the minimated at the minimated Merrison had not thought of that. He was useline this newfound and nermanent nervonal statistic (if the Soview would someday release Nata/va/s statement, undistorted and unswyrittes) and he found it suvery

Yet he was not satisfied. "It is not what I want to be mmembered for."

To a goal ph on this jurney we are to take and your will end up being known for much meen," said Dathere. Theides, as my old father used to say, it is goad to be at the head of the table, even if only one other sits with you and them is her a boot of cablage scop to share."

Durhney stepped away and now Kaliinin was again at Montison's side. She tagged at his sherve and said, "Albert."

"Yes Southin"

"You were with him after dinner last night, weren't you?" 'He showed me a map of Shapirov's brain. Marvelous

"Did he say anything about me?"

erison hesitated. "Why should he have"

"Because uses are a curiests may traine to except over own private deally. You would have adead "

Morrison winced at her characterization of him. He said, 'He defended himself.' "Blow?"

"He mentioned an earlier programcy - and - and abortion. It was not something I would believe, Sophia, unless you admitted it."

Kallinin's eyes became bright with gathering tears. 'Did he---did he describe the circumstances "No, Sophia. Nor did I ask."

to might have told you. I was forced when I was seventeen. It had undesirable consequences and my parents took lega

"I understand. Perhaps Yari chooses not to believe this." "He may choose to think that I asked for it, but it is all on the record and the rapist is still in prison. Soviet law is hard on offer I recognize the fact that women can failedy accase men of rape, but this was not one of those situations and Yari knows it. How cowardly of him to state the fact without

Morrison sail. "Nevertheless, now is not the time to be concerned about this, although I understand how destrive it must affect you. We will have a constituant of bio do inside the this and it will need all our concentration and skill. Lasure you, though, that J am on your side and not on his? Kallinin nodded and said, "I thank you for your kindness and sympathy, but don't be altraid of me. I will do my job."

At this point, Botaneya called out, "We are now to emer the ship in the order in which I call your names: Durhney -- Koney -- Kalimin -- Morrison -- and myself."

Boranova moved immediately into position behind him and marmural, "How do you feel, Albert?"

"Terrible," said Morrison. "Did you expect any other answer?"

"No." said liceanova. "But, nevertheless. I expect you to do your work as though you didn't feel lowey. Do you understand?"

"I will try," said Montion through stiff lips and, following Kaliinin, he entered the ship a second time

One by one, they had to adjust themselves into their starts in the arrangement that Kalitain had described the day before. Durhney was front left at the controls, Koney front right, Kalitain mid-left, Morrison mid-left, and Boranova mar left. Morrison Minked his even and New his nose into a forum he found in one of his reacter. What if he needed more tissues than had been surveiled him? (A silly thins to werry about, but it was a more comfortable werry than some he mieht hars.) His forehead foit dams. Was that because of the closures? Week! If

He thought underly of the first automates of a curranty before -- even more constricted, more helpless -- but going into a space that was somewhat known and understood, not into a microscour that was structly virgin territory Yes, as Montison sat down, he felt the edge of surror dalled. He had, after all, been in the ship before. He had even been miniaturized and deminiaturized and was none the worse for it. It didn't has

He looked around to use how the others were taking it. Kallinis, to his left, looked coldly blank. A rather key loveliness. It might have been impressive that she was showing no fear, no anxiety, but (as she had said of him) she was probably siring there fighting here private devils. Durbary was looking back, perhaps trying to weigh reactions as Morrison was, and very likely for different reasons. Morrison was trying to bolone what little inner courage he could find by berrowing from that of others, whemaa Durbary (Morrison thought) was weig

Koney faced directly forward and Montison could see only the back of his neck. Boranova was just searing herself and was straightening her flimsy cotton costame

here valit, Thends, Fullew-texteles, Balter w. can knew, w. mast ends inpect our opportunit, Gave w. start, ulling ner consulting doord' vork is not grange to state ner or normalies, job A. Any fuller word to ory, The rely viso topport as in an injected and on the relative as a start of the *As for you, Yuri, my friand, your cureb-whareve-you-cull-k - Or your brain sup, as anyone with some would cull is -has been transformed point for point into the software of your computer behind the plans before you. Planse make saw that you know how to openne the plans and then see if the beain map is functional in all respects

"Sophia, my little dows, I don't know what it is you do except that you make electricity, therefore make way you can make it is the wyle you will find sainble. Nandya," his voice little slightly, "are you all right back there?"

Boranova said, "I am perfectly all right. Please check Albert. He needs your help most."

"Of course," said Dezhney. "I have left him for last, so that he can get my full attention. Albert, do you know how to operate the panel before you?"

"Of coarse not," Morrison snapped. "How should I know?"

"In two seconds, you will know. This contact is to open and that contact is to close. Albert, open1 -- Ab, you see, it slides open moisslessly. Now close! Perfect. Now you know. -- And have you seen what is inside the record?"

He mailand that it hadn't actually even occurred to him to try to stymic the voyage by saying his program wasn't working. Dearly as he longed to avoid the risk, he could not do so at the cost of vilibing his program And then there was vaddenly cause for a bit of fresh matic within Monison's heart. What if the reseman had been damaged somebow in transit? How could be nerousade them that there was made somebine wrome and that he was not simply remembine?

'Good is everyone satisfied with the ensiment' Then lift your neury years from your sears and check the sidder mands them. Do they work? Believe me, you would all be yory unhance if they didn't. orrison watched Kalkinin open and close the panel (covered with a thin layer of upholeney) that she was sitting on. His own worked similarly when he initiated her motions Derbner still "It will take addresses too within resore but for an hora we will have no occuries to check the out. Is can the worst comes to the worst check there is a small relief of fame is a small relief of fame is a

"The thought has occurred to me at times, Natasha," replied Dotherv coelly. 'I will now text the controls of the ship and if all responds properly, as I'm sure it will, we will be ready to begin There was what seemed to Morrison to be a tense wait in utter silence, except for a soft whiele between the teefh on the part of Dezhney, as he bent over his controls

upater," said Morrison.

Thefe a statis. But do me a floor and see if it is a commune controller to voors. Your resonance and where are it is the commune controller is not intered to voor. I will not control to work. I will not control to voor. I will not control to work. I will not control to voor. I will not control to work. I will

Boranova said, "Please, Arkady, no dramatics. There is no time."

Durbary intered bat: "But if you tell me that something is wrong that really inty wrong, my mood Albert, Yari will find out. I assum you, and neither he, nor L, nor aryone will be shared. So if it occurs to you that investing a mostle may delay the trib or even cancel k. In it moscurs to you at one."

Merrison could feel his face flushing and he hoped that it would be interpreted as the result of a generous anger over the thought that he might be dishonest in this fashion and not as guilt over a folial plot.

But it all worked beautifully, at least as far as he could tell without it being in actual contact with a skall behind which an active brain existe Derbary said, as he watched Morrison's hands working. "We have placed new batteries in it. American batteries. "Everything is working property," said Morrison, "as far as I can see.

Boranova said dryly, 'If you lost seven kilograms, Adsady, so much the better. And we would consume loss energy in the miniaturization.'

Actually, as he beyond over his comments, he thought avails of what his dowin and research reduction of his teneran had down. New and thus, these most recearch dowins of his had broach him - feelines. It was not searching the could identify, but it fits as though his commentation of his teneran had down. New and thus, these most recearch dowins of his had broach him - feelines. It was not searching the could identify, but it fits as though his common his dowins of his had broach him - feelines. It was not searching the could identify. But it fits as though his common him dowins of his had broach him - feelines. It was not searching the could identify. But it fits as though his common him dowins of him had broach him - feelines. It was not searching the could identify. Or might it all be simply the will-to-believe, the same will that had led Percival Lowell to see canals on Marc?

Br. - E. Durannes Jana V. Merice Private S. Dirich Delate bases Mixing Princes V. Verant 2019;21. A 2019 statistical 2016 also

Then Durchary or un wheel his fasthard with his devree, and said "All is well. Commade human and Commade American. the futures: ownee we face is about to breach "He fixed as auditor in his high ear, mised a time microschere before his month, and usid." All is committed outside? - Vere well, then, with us conf formace, commade all happen and Morrison cast a quick look at Kaliinin. She was still immobile, but she seemed to be aware of Morrison's head turning toward her, for she said, "Yes, we are min The blood roand in Morrison's ears. This was the first time he was consciously miniaturizing

CHAPTER 9 - ARTERY If the current flow is taking you when you want to go, don't argue. -- Deathney Senior ined, for the most part, focused on the recess before him, on the computer, and on the software he had inserted. The software - the one material object of the long ago.

Long age? It was low shares handed barrs ago that be was half-during bie way through a ddl talk on bit lost day at the conference and wondering whether them was any way to save bie position at the university. And now a handed objective years had passed in those handing dojective hours and he could no longer clausly visualize the university at all or the life of an effective hours and the second entered of a structure of the second entered of the second enter He would have given a great due to have breaken out of the dull cycle of souliess striving a handred hours ago. He would give a great duel new - a great duel new - to break hack into it new, to wake up and to find the last handred hours (or years) had never taken place.

He glanced through the transparent wall of the ship, then at his right effew, his ryse half-closed as through he were really relaterate to see anything. He was relaterate. He did not want to see anything larger than it should be. It would interfere with his will hope that the miniaturation process half breakes down or that the whole thing hal - somehow - been as illusion.

But a man walked into his view - tall, over two meters tall. But then, perhaps he was actually that tall. Others appeared. They couldn't all be that tall. He shrank down into his seat and looked no more. It was enough. He knew that the miniaturization process was going its inenorable way. The silence inside the ship was oppressive, unbearable. Morrison felt he had to hear a voice, even if only his own Kallisis, at his left side, was the one to whom he could speak most easily and the might be the beer of a difficult choice, pathape. Since Montison dd not wast Denhary's misplaced joculatity, or Bonnova's one-dimensional concentration, or Konov's dark intensity, he named to Kallis

He said, "How will we get into Shapirov's body, Sophia It took a while, it wenned, for Kaliinin to hear him. When she did, her lies moved railidly and she said in a whister. "Injection."

Then, as though with a supreme office, the apparently decided that the must be comparisonable, so the named to him and said, "When we are small mough, we will be placed into a hypodernic needle and injected into Academician Shapirre's left caretid artry." "We'll be shaken up like dice." said Morrison, arrealled.

"Not at all. It will be complex, but the problems have been thought through." "How do you know? This has never been done before. Never in a ship. Never in a hypodermic needle. Never into a human body."

"Thus," and Kalinis, "be problem like the - much simpler ones, of course - have been jamed for a long true and we have had emaded suminary over the law flow days on this mission. You don't hink the Aduly's anonexerment before minimum to be part - the ones about to left ious and o on - we new to us, do yee! We have hand if all below, over and over. I was for year been about to days. 'Tell me, then, what will be

T will explain events as they occur. For new we do nothing until we are in the continuer range. It will take another twenty minutes, but not overything will be so dow. The smaller we set, the faster we can miniaterize, in resonance. How you foil any bad effects ver?"

Merrison mentally subtracted the rapid busing of his heart and the paming of his longs and said, "None." Then, feeling that to be an unduly optimistic remark, he added, "At least so far." "Well, then?" said Kaliinin and closed her even as though to indicate that she was tired of talking.

Morrison thought that might not be such a bad idea and closed his as well.

He might have actually fallen askep or he might simply have gone into a prenerivo state of semi unconsciousness, withdrawing from maily, for it seemed that no time had passed when he was brought to by a slight jar. He opened his eyes wide and found himself a commenter or so above the seat. He had the odd sensation of drifting with each vagrant puff of wind.

The many balance of a set of the same balance of the same balance balance of the balance balance of the balance of the balance balance of the balance balance of the balanc

To his own surprise, Morrison had not been feeling helpless. He had rather enjoyed the sensation of sitting on air. Killian usaked a get on her sure edge betwoon her lasses and a beha zonal her visit flyged zway. A had zet ben hern, Merine wa sure, when he had closed bie sync and new 'e wa again to longer there, her is disapprand, with a stage, into a recess in her stat. She resiond weard Merinem and stat. "This, here to your hit, is your hit given the ignore." Marries could be possible double sync and new 'e wa again to longer there, her is disapprand, with a stage, into a recess in her stat. She resiond weard Merinem and stat. "This, here to your hit, is your hit given."

She presed the spectre - a concerbar darker circle in a light background - and a flexible network of clear plastic shot out with a faint hirs, weapped itself about him, and buried its triple tip into the seat at his other side. He found himself held, elastically, in a kind of lacework.

If you want to free yoursuif, there is the belt release them, just between your knees." Kalikin kneed further toward him to indicate the place and Mistrion found the prosure of har body against his to be placearable. The did not ment to be surgered it and human contributed her truly, the multipl hered? back into her chair and multiplied hereaff

Morrison glanced quicky around, squeezing upward and forward as far as the belt would let him, and peezed, with difficulty, over Konev's shoulder. All five were belted He said. "We've miniaturized to the point where we have very little weight, is that it?"

"You only weigh about twenty-five millignams now," said lloranova, "so that you might as well consider yourself weightless. Then, too, the ship is being lifted."

Morrison looked at Kalinian accordingly and Kalinian heregoed slightly and said. "I still you Ed describe things as they happend, but you seemed to be aslogs and I thought it visor to let you stay that vary. The jar of the charp voles you and lithed you out of the sure.

"The champ?" He looked to one side. He had been conscience of a shadow on both sides, but walk were supposed to be opagae and he had domined the senantion. New he suddenly remembered that the shaj's walk were transparser and realized that the light on either eide was blocked. Kiliste nodel. A charge in giping on sub-lying to keep so multy on the we are oblastic operationally. Takket operation is a stable decay before the stable of the stable operation is a stable operation of the stable operati

Merrison looked or sanis. Objects onside the dis than initial how been visible threach periods of the valid by the cannot the field. Here would belows an oniside the valid by the cannot the field. Here would belows and the been visible. Merrison could be discussed and valid by the cannot the field. Here would belows and the been visible threach periods of the valid by the cannot the field.

minor the mass of an electron to half. But the environment interaction is not constitued and therefore, mither is mass lass. That means that the

that loss - not entirely in proportion, but to an extent. We have so little mass now that it takes much loss energy t

He full the ship studiestly jar again as the charpe withdraw, although he couldn't actually see them withdraw. One moment they ware there and the next they wereth. The movement -- on his scale -- was too rapid to see. Then he felt himself risine slichtly arainet the belt that bound him in and he interpreted that as a downward meyometr of the shin. There followed a slow bobbine sensation.

Deduces pointed to a dark horizontal line that moved dowly up and down against the wall of the ship and usid with satisfaction, "That's the surface of the vator. It thought the motions would be weree. Apparently, there are segments in this place who are almost as good as I am

Benneva said. "Actually, envincements has little to do with it. We're being held in place by sufface tension. That will only work while we're at the surface of a fluid. It will not affect us once we're in Sharkov'r body:

'But this ripple effect, Natisha? This up-and-down movement. Is that affecting it at all?" Boranova was studying her instruments and, in particular, a small screen on which a horizontal line

semal to be playing out forever, without badeine from the center. Morrison, twist Boranova said. "It's as steady as your hand when you are sober. Arkady."

"No better than that, eh?" Dechney's laugh boomed out

(He sounds relieved, thought Morrison uneasily and wondered what the "it" was that Dezhney had felt might be affected.) "What happens now?" asked Morrison.

Konev spoke for the first time, as far as Morrison could remember, since miniaturization had begun. "Must everything be explained to you?"

Morrison answered with spirit. "Yes! You have had everything explained to you. Why should I not have it explained as well?" Boranova said quintly, "Albert is perfectly correct, Yuri. Please hold your temper and be reasonable. You will need his help soon enough and I hope he will not be so discourteous as to snap at you.

Koney's shoulders twitched, but he said nothing in reply.

Boranova said, "The cylinder of a hypodermic syringe will pick us up, Albert. It will be under remote

And, as though that cylinder were waiting to hear her say to, a shadow encased them from behind, availewing them almost at once. Only in from was there a circle of light visible for a moment and then that disappeared, too.

ranewa said calmity. "The needle has been clamped on. Now we will have to wait a while."

The interior of the ship, which had become spite dark, was suddenly suffused with a white light, rather softer and more restrict than before, and liocanova said. These now on these will be no more light from the conside surel our journey is ever. We will have to rely on our own internal illumination, Albert Puzzled, Morrison looked around for the source of the light. It seemed to be in the transparent walls themselve

Kaliinin, interpreting his glance, said, 'Electrohamine

"But what is the source of power?" "We have three microfusion engines." She looked at him preadly. "Of a type that's the best in the world." Then she repeated, "In the world."

Merrican let it go. He had the impulse to talk of the American microflusion engines on the latest space vessels, bet what would be the point? Somedry the world would be freed of its nationalise favore, bet that day had not yet artived. Self, as long as those favore did not express themselves in violence or threat of violence, matters were bazable

here, loaining back is his our with his sume behind his ouch and apparently addressing the goardy fluencianed will before him, outd, "Strendby what we will do is expand a hypodemic systeps, place that around a full-steed dap, and minimize the whole thing. This we won't have this small-scale managementing."

Morrison said. "Oh. can you do the other thine, 100? What do you call it? Maximization? Ginantization?" "We don't call it anything," said Konev crieply, "because it can't be done."

"Maybe someday, though."

"No," said Konev. "Never. It is physically impossible. It takes a lot of energy to miniaturize, but more than an infinite arrow "Even if you booked it up to relativity?"

"Even so."

Durhney made an inclegant sound with his lips. 'That for your physically impossible. Someday you will see.'

Koney mlarsed into indirnant silence.

Morrison said, "What is it we are waiting for?" Beraneya said. "The last-minute restruction of Shariroy and then the movine up of the needle and its invertion into the carotid."

As she spoke, the ship was jarred forward.

"Is that it?" asked Morrison.

"Not yet. They were merely removing the air bubbles. Don't worry, Albert. We'll know."

"Why, they'll tell as. Arkady is in contact with them. It's not difficult. Radio wave photons miniaturize as they cross the boundary from here to here and deminiaturize as they cross in the other direction. There's very little energy involved -- even less than in the case of light.

Datheev said, "It's time to move up to the base of the needle."

"Then go ahead," said Boranova. "We might as well test the motive power under miniaturization."

was a gathering numble that mached a low peak and then settled down into a buzzing mammar. Morrison resioned his head in order to look as nearly backward as he could against his restraining bult.

Water was charming behind them as though paddle wheels were turning. In the absence of any real reference point candide, it was impossible to judge how quickly they were moving, but progress seemed dow to Morrison

"Are we moving much?" he asked.

. "No, but we don't need to," said lloranova. "There's no use wasting energy trying to move faster. After all, we're pushing against normal-sized molecules, which means high viscosity on our scale

"But with microfusion motors --"

"We have many energy needs for matters other than propulsion."

'Trn just wondering how long it will take us to get to key points in the brain.' eve me," said Boraneva grimly, 'Tra wondering, too, but we will have an atterial current taking as as close as po

Durhney cried out. "We're there? See?"

"Youry?" said Morrison blankly.

Right about, in the fi f the shin, a mund circle could be seen. Morrison had no trouble translating that into the base of the needle.

On the other end of that needle, they would find Prote Shaniers's bloodstream and then they would actually be within a human body.

(They're not speaking to an infant, he thought indignantly. I are their equal

Morrison said. "We're too large to go through the needle. Natalya."

But above these contradictory unvex came a bit of realism. Search these recents were not such fook as to dual with a shire that could not be induced to a size that would russ through the needle it was supressed to rass through No conceivable startidiry in these very intelligent receive could rack that trick. And Bonanova, as though she were resonating with that thought, said, almost indifferently, "Yes, we are too large now, but we will not stay too large. That is my job hars

Abort, aid Bicanova, 'If protation were quantized, but it would take the same encomous amount of energy to indice a mass by half, segarations of the original value of that mass. To reduce the mass of a messe by half would take the same energy a van required

'Of course. We have been reduced to this point by our central miniaturization device. Now the fine adjustments will be made by me. Kalijaja marmaned. "That is one of the things we must save our microfusion motors for as much as possible."

He first a peculiar analyzes of emotions at the thought. Uppermost was a feeling of hope that perhaps the whole experiment had failed. This might be as small as they could get and it wan't small enough. They would have to dominiated even and it would all be over

Morrison looked from one to another. 'Do we have enough energy on board ship for further miniaturization? Sterely the impression I got was that a vast quantity of energy was needed for

Morrison said, "But since you've never miniatentized anything as large as this ship through so many orders of magnitude, you are depending on the extrapolation of data obtained for a much different size range."

"Yes," said Bornsova. "We are taking the chance that the extrapolation will hold, that something new and unexpected will not surprise us. Still, we live in a Universe that faces us with uncertainties now and then. That car's be helped.

Under that thought, weldhalders, was a listic sight of disciptionance. Barring cases to faculty it is not be a well to get non-the body and experience to interve of a network off distance), bying and care of diagone, no scale of builders, Marrison would have turned away in horner at the thought – but doing minimized, having machade the point, having mach

"But we all face death if something cost wrone."

"Disht you know that?" said Bonnova calmby. "Have you been unaxy about this fantastic voyage of ours simply for the pleasure of being uneaxy? But we are not alone in this. If things go wrong and the otor reath and wondering if he or she will survive an explosion. You see, Albert, even those who are not undergoing the risks of r

Durhney turned and erinned widely. Morrison noted that one of his upper molary was capted and did not much the rather volkowish tint of his other teeth. Deshney said, "Concentrate on the thought, my friend, that if something goes wrong, you will never know. My father used to say, Since we all must die, what better can we ask for than a quick and saidan death?"

Morrison said, 'Julius Caesar said the same thing." Dephasy said. "Yes, but we won't even have time to say. It to, Brate."

"There will be no death," said Koney sharply, "and it is foolish to speak of it. The equations are correct."

"Ah," said Dechney. "There was a time of supervision when people relied on the postection of God. Thank Equations we now have Equations to rely on."

"Not funny," said Koney "I didn't mean to be funny, Yuri. -- Natasha, they're ready out there for us to proceed."

Bozanova said, "Then there will be no further need to speculate. Here we go."

Morrison gripped his sour tightly, preparing himself, but he felt nothing happen. Up front, though, the round circle he had made out expanded and grew dimmer and dimmer as it moved very slowly backward until it could no longer be made out

"Are we moving?" he asked automatically. It was the kind of question one was anable to refinin from asking, even though the answer was obvious

"Yos," said Kalinia, "and we are expending no energy in doing so. We are not butting the water molecules. We are being carried along by the water flow in the needle as the cylinder preses in slowly."

Morrison was counting to himself. It kept his mind more efficiently occupied than studying the second hand of his watch would have done. When he reached a hundred, he said, 'How long will it take'

"How long will what take?" asked Kallinin

then do we reach the bloodstrea Durbacy said. "A few minutes. They are some very dowly, just in case there is some kind of micrometholence. As my father once said. It is shown, but better, to create alone the downward toth than to have over the citit."

Morrison granted, then said, "Are we still miniat

Beraneya anywared from behind him. "No. We are down in the collidar range and that is far enough for our needs now."

Morrison was supprised to find that he was trembling. After all, so much was happening and so many new things existed to think about that he had somehow lacked the room to remain in terror. He was not terrified, at least not to an acute stage - yet for some reason he continued to method

He attranspaced to will hairsoff to relax. He tried to be himself droop, but that required more than an effort of will. It needed growinational gual and there was none to speak of He closed his syst and dowed his bundling. He even trial humaning, under his breach, the chead singing from Roehover's Nath Symphory Finally he felt himself forced into comment on the matter. 'Trn sorry,' he said. 'I seem to be shaking.'

Dethery spickered. "Aha' I wondered who would be the fi

Boranova said. 'It's not you, Albert, We are all shaking slightly, It's the shin-Morrison was at once elevated into fright. 'Is something wrong with it

"No. It's just a matter of size. It's small ensuch to feel the effect of illrownian motion. You know what that is, don't you?"

It was a parely theterical question. Boraneya would sumly expect a high school madem of physics to know what Brownian motion was, lot alone Morrison, and yet Morrison found himself explaining it in his own mind - not in words, but as a flash of concept.

Every object suspanded in a liquid is bombanded on all sides by the atoms or molecules of the liquid. These particles strike randomly and therefore unevently, but the unevenness is so small compared to the total that it is unnoticeable and has so me lisions - first in one direction, then in another -- randomly. It moved slightly

Morrison said, "Yes, I should have thought of that. It will get worse if we continue to become smaller "Actually, it won't," said Boranova. "There will be other counteracting effects

"I don't know of any," said Morrison, frowning.

"Nevertheless, there will be such effects

"Leave it to the Equations," said Dechney in an affectedly pious tone. "The Equations know." Morrison said, "I think this could make us seasick."

To containly would a wild Becauses. They there is a chemical transmer for they. We have been deard with the same chemical the commensus are seniors successive.

"Not I," said Morrison indignantly. "Not only haven't I been treated, I haven't even been forewarned

"We told you as links as possible of the disconflorts and dangers out of concern for your comfort, Albert. As for treatment, you consumed your dose with your breakfust. -- How do you feel Morrison, who had begun to feel a bit squeamish with all this talk about sickness, decided that he felt fine. Astonishing, he thought, the tyranny exerted over the body by the mind.

'Good,' said Boranova, 'because we are now in Academician Shapirov's bloodstream.'

Morrison stared through the transmarent wall of the shin.

Blood?

His first impulse was to expect reduces. What else?

He poered out, squinting his eyes slightly, but could see nothing, even in the gleaning light of the ship. He might as well have been in a rowbeat, drifting down the caim surface of a pond on a dark and cloudy night.

Moreleas's thoustees suddeely seemed. In the absolute senses, the lieft within the ship had the wavelength of eastman rays - and very hard eastman rays at that. Yet the wavelengths were the result of minimatizing ordinary visible light and to the country minimatized ordinary visible light and the sense of light rays and dents; below of the resolution of light rays and dents; below of the resolution of light rays and entry.

Outside, just beyond the hull of the ship where the minimutation field ended, the minimutation photons enlarged to enfluency light-wave photons and those that were reflected back to the ship were minimutation lagarity that encoded and the shift of the

Teditoring his line of thought, he whopend to Kallinin, who was bent over her instrument, "Sophia, when our Lght lawer the minianzization field and expande, it must give off hera energy, and when it's reflected back into the ship it must about energy in order to be mi "Perfectly. Albert," said Kalijain without looking up. "Our use of light results in a small but steady loss of energy, but our motors can supply that, it is not a significant drain."

"And are we really in the bloodstream?"

"Never fear. We are. Nataba will probably dan the internal lishts in a while and you'll see the outside more clearly then.

Almost as though that were a signal, Boranova said, "There! Now we can relax for a few moments." The lights dimmed.

At once, objects outside the ship came dauly into view. He could not make them out clearly yet, but they were immersed in something heterogeneous, something with objects floating in it, as would be true of blood Morrison stirred uneasily, straining at the constraint of his seat belt. He said, 'Bet if we are in the bloodennam, which is at a sumperature of thirty-seven degrees Celsius, we'll --'

'Our temperature is conditioned. We'll be quite comfortable," said Kaliinin. "Really, Albert, we've thought of these things."

"Perhaps you have," said Morrison, slightly offended, "but I haven't been privy to those thoughts, have 1? How can you condition the temperature when you don't have a cold sink?"

We don't have see here, has there's ourse space, in all there's The inclusion have prior if a bina druck of valuation for addition, how within the doip juins our expace and we know the adjust produced a system of the product and prior our prior out the adjust prior out the adjust prior out the prior out the adjust prior out the adjust prior out the adjust prior out the prior out the adjust prior out the a

"I see," mattered Morrison. It was ingenious -- but perhaps obvious, after all, to those used to thinking in terms of miniaturization. ed to see a corner of the computer s out of Knew. It contained what Micrison thought might be a map of the circulatory system of the neck. For a moment, before his body caused in fight against the wolbing of the beh and he sank down into his war again, he saw a small red dot on the screen, which, he deduced, was a device

rrison noticed that the controls of the ship, immediately under Dezhnev's hands, were laminous, as were the instruments before Kalinin. He struggled to raise himself in his stat and man

He was matter a little from bis offert and had to wait a few moments to menin control of his beach. The means in which his come commute mated was illuminated with a shielded that his of liste from his face he mining his left hand. Then he looked out

For in the distance, Montion could use something that looked like a walk, a harter of some sort. It received, then approached, then received again, over and over, shythmically, Automatically, he looked at his wash for a few seconds. It was clearly the polarison of the arterial wa He said to Kullisin in a low voice, 'Obviously the passage of time is not affected by minimutation. At least the publicles of the bast is - just what it ought to be, even though I view it with minimutated eyes and time it with a minimutation.

It was Koney who answered. Thus intri quantized apparently, or at least it intri affected oy the minianzization field, which may be the same thing. That's conversion. If we had to take a shifting time flow into account, things might become unburably complicated

Morrison silently agreed and turned his thoughts in other directions

If they were inside an artery, and if the ship were merely being evept foreard by the current; the foreard messment would have to be in quare, one sport for each contraction of the denant heart (the very distant heart - on the scale of their present size). And if that were us, he sught to feel these sports of motion. He closed his eyes and tried to hold as still as possible, to move not at all except for the trembling of the Brownian motion -- which, after all, he could in no way control

Ab, he could feel it. A slight but distinct much backward as the spart started, a slight much forward as it came to an end.

But why was the spart not more energetic? Why was he not yanked backward and forward in a sick

And then he thought of the mass he no loancer resonanced. With his remaining mass so tizes, his insertia was similarly tizes. The viscosity of the normal fluid of the blooderscam custed an encences custioning effect, so that the sounts was all but lost in the Brownian motion.

And, ever so slightly, Morrison felt himself relax. He felt something inside himself untighten a bit. The miniatatized environment was unexpectedly benign.

He looked through the shir's transmost hall arais. his eves focusine on the volume between himself and the anstrial wall. He could see babbles, fairedy outlined, No. not babbles, but thinse of sub-mass - many of them. Some tanned dowly and channed annexes share as they did so. so they were not sub-mass. They were dides, he now realized.

The much haves is on him and shamed him. Why was he to dow in identifying them, since he lawer the same error to day, no. He could not multy concerve or that, no. He could not multy concerve or filmed is a bring in a Mondermany, it was no oney to approve be was in a submatrixe making in way through an excess. He would annumbly expect to use the familiar eights of an excess and would be foolibbly partial at anything he was the did not multy concerve or flam.

. He would see the red corpuscles of the blood -- the erythrocytes -- and fail to recognize them

He watched the erythrocytes with interest and saw them quite clearly now that he had recognized them for what they were.

Of course, they went in the faithy velocity, Each one absorbed some destroyee lists to recode out that color. Get them is balk, though, millions and Million of them, and they would abordy mesone such lists to assure red -- in antrial Mod, anyway, and they went is an antery new. Once the colir withdraw the occursed, the individual connected would seem fainty Maioh, and in balk.

Merrison fob fields at his failure to malize at once that they were still minimutizing and, at the same time, bittendy assential at Keney for making 1 plain he morganized that Shly. The workle was that all these others had been living and thaking minimutizes for years and he kinest?, a newcomer to the concept, was still trying to crass it into his subscatter beam. Could(s) they sympathize with his difficulties

They were bionecare direction for each side. To Morrison, they were enormous, considering that, under normal confisions, they were microscopic, confuse seven and a half micrometers in diameter and a little over two microscopic methods when they were, evolute objects the size of his hand.

"I take it," said Morrison, "that we're simply coine with the flow."

There were many of them in sight and they had a tendency to pile together is realems. These weren't matic, however, Some compared would peel off the realemes and others would add on and these were always some single corpuscles in view. Those that were in sight standal to stay in sight they weren't moving relative to the ship

"That's right," said Kaliinin. "It saves energy."

But, at that, the red corpuscies weren't enti the to the skip. Morison notical one corposels defining dowly reward the skip, carried perhaps by a bit of microarchelance or by a madom pash of Brownian motion. The corposels flammed skipty and monomrarily against the plantic of the skip and then mbounded

Morrison turned to Kaliinin. "Did you see that, Sophia?"

"The red corposcle realging us? Yes

"Why didn't it miniaturize? Surely it entered the field."

is quite, Albert. It bounced off the field, which extends a small distance beyond any miniaturized object, such as our ship, in every direction. There's a certain rep ization, the stronger the republics. That's why very siny objects such as miniaturized atoms or subatomic particles go through matter without interacting with it. It's also that which keeps the m marter, and the greater the extent of miniate "How do you mean?"

"Any miniaturized object is always surrounded by normal matter, unless it is in deep space. If nothing served to keep norm

Morrison turned back to the view and, almost at once, something that was obviously a shredded red corpuscle drifted into view.

"Ab," said Morrison, "is that an example of one that approached us too forcefully?"

Kallinin bent toward Morrison to get a be ver i the dension he ve printing. So doub lack has 1. So doub has has 1. So doub has has 2. So doub has have of the vers i to ver i to ver

Morrison said, "What about platelets?"

"Terrer to molecular size. Albert " And all of Morrison's approbensions surged up again.

Why do you ask?"

"That must be a plander I see there." He resisted. "It's lentil-shaped and only half the size of the red compactes." A passe and then Kaliinin nodded "Ah yes, I see it now. That's a planelet. There should be one of them

That was about right. Morrison thought. If he were on a carousel, machine out for rines as he nasod, and such red correscile were an onlineary ion rine, the occasional similer would remeasure the covered brase rine.

Morrison said, "My point, Sophia, is that plantiets are more fragile than red corpuscies and when they break they eart the cloring process. If we break a few, we'll start a clot forming in the attery. Shapirov will then have another stroke and samely dis.

Becauve, who had been limiting to the exchance between Morrison and Kallania, internoved at this point, "In the first place," the said, "planters are not as fratefic as all that. They can strike to listicy and rebound without harm. The dateset of another stocks list at the annulal wall. The th

Morrison watched a plansier that variabed, now and then, behind the numerous red corpuscies. He wanted to see if it would make contact with the ship and, if it did, what would happen. The plansiet, however, did not obligo hat remained at a distance

We don't want to get stack in the pipe," said Dorhney genially, "by being too fat." Then, as another thought strack him, he added, "You know, Natusha, I've never been this thin in my life."

It then occurred to Morrison that the planelet appeared to be as large as his hand. How could that be if they were half the diameter of the red corpuscia and the red corpuscles were themselves as large as his hand? His eyes sought out a red call and, sure enough, it seemed considerably larger than his han

He said, troubled, "The objects out there are entities larger,"

Morrison was in no mood for airy banter. "But how far do we miniaturize, Natalya?"

ning inability to draw the proper conclusion from an observed fact.

"We're still miniate urizing, obviously," called out Konev, apparently annoyed at More Beraneya said. "That's right. Albert. The coronary is nanywine as we promote and we want to know pace with it." Boranova said, unmoved, "You are as fat as ever, Arkady, on the scale of Planck's constant,"

Br. (E.D. annov Alland Allerian Prince Alleria). Delete have Mainer Fanade Aller and Miller

He studied the red cornexcles monthly. They were distinctly larger. They were wider across than his cheet and their boundaries were becomine less thars. Their surfaces environd as then they were carvas have full of versa.

He said in a low voice to Kallinin, "Molecular size" Kalijaja looked quickly at him, then turned away and said. "Yes."

Morrison said, 7 don't know why that should bother me, considering the small size to which we have already miniaterized, but there's something rather frightening about being as small as a molecule. How small a molecule, do you suppose? Kaliinin shragged. 'I don't know. That's up to Natalya. A virus molecule, perhap "But this sort of thine has never been tried."

Kallinin shook her head. "We're charting unknown

There was a pause and then Morrison said uncasily, "Aren't you afraid? She look at him forong, but comined to whipe; "Of come Ta abad. What days to that I and's involution to be availed when to be are be abad when to be straft down at low a days to be a straft when people data at much as they do, to the out of the tar at pipe data." She was visually lissing drough chacked until. They we steare to be stray for you bear

"No," mattered Morrison, taken aback.

Three's unbiag numericable about being attaint, the water on, "as long as you duth as statude - as long as you duth as statude as doing outplace defendent as long - "Bo interrupted durouff in a biting -"Bo interrupted durouff in a biting -"Bo interrupted durouff in a biting -"Bo interrupted durouff in a biting - "Bo interrupted durouff in a biting - Bo interrupted durouff interrup "But now," she went on, "I intend to do my part, even if I am half-dead with fear. No one will sell from my actions that I'm aftaid. And that had better be your case, too, Mr. American."

Morrison swallowed hard and he said, "Yes, of course," but it sounded very unconvincing, even to him.

His eyes flicked backward, then forward. There was no use whispering in those close quarters. There was no whisper so low it would not be own

Boranova, behind Kalimin, was obviously busy with her miniaturization mechanism, but there was a tiny smile on her face. Approval? Contempt? Morrison couldn't sell. As for Deahney, he turned his head and called out, "Natasha, it is continuing to narrow. Should you hasten the miniat

"Til do what is needed, Arkady."

Derheer's eye caught Morrison's and he wished, with a gets. "Don't bulieve little Sophia," he soid, prevading to whisper. "She is not aftaid. Never attaid. She just doon't wast you to be abose with your unassiness. She has a vory soft heart, our Sophia, as soft as her -

"Keen easiet, Arkaly," said Sophia, "Surely year father must have told you that it is not wise to beat the ensty tracest you call your head with the metry stress you call your tracest."

"AA," said Duchnov, reling his eyes, "that was hards. What my futher did ony was that no keils could be hand as sharp as a vormatic singus. - Bat, Abber, wrisonly, reaching molecular size is nothing. Wait und we have laund to attach neizhvity to quartern theory and then, with a sing pall of energy, we will makes cound o subatomic size. Then you will see." "What will I see?" said Morrison.

"You would see instant acceleration. We would simply take off -- 'He removed his hands from the controls momentarily in order to make a whitzing genure with them, accompanied by a shrill whistle. Boranova said calmiv, "Hands on the controls, Arkady,"

"Of cases, up dar Nataba", "ald Dather," A means of excessible drama, to nones." Than to Marinea, "Internal Year evoluty have evoluty by a most of light, the mach inter opead of light, the mach inter opead of light, the mach inter opead of light mader wath could doe way to a difference of the second the second be accessed and ac Morrison said, "And how would you guide the flight, Arkady?"

"What?"

"How would you guide it?" said Morrison s stands, "As some as the abip records down to the proper statebarres, by will, is effect, radius convect at handwed of light-year per second. Than mans that if here went tillions of daps, they would abors on its every direction with spherical symmetry — like smaller. But since them would only be out abje, it would arow convent its more particular direction, but in an aboutual pupped

"That's a problem for the clever theoreticians -- like Yuri."

Koney had not indicated any interest in the conversation up to that point, but now he snorted loadly Morrison said, "I'm not sure that it's wise to develop the traveling and careleosly assume the staering. Wouldn't your father say: 'A wise man does not build the roof of a house first."

"He might," said Arkady, "but what he once did say was this: 'If you find a gold key without a lock, don't threw it away. The gold is also sufficient." Bornnova stirred in her seat behind Morrison and said, 'Brough with the saws and sayings, my friends. -- Where are we, Yari? Are we making progress?

Koney said, "In my opinion we are, but I would like the American to support my judgment, or correct it."

"How can I do either?" snapped Morrison. 'Tra strapped in."

"Then unstrap," said Koney. "if you float a bit, at least you cash float very far."

For a moment, Morrison fumbled at his seat belt, having forgotten the location of the appropriate contact. Kaliinin's hand moved quickly and he was free

"There you Scelais" he said

"You will learn," she replied indiff "Lift yourself so that you can see over my shoulder," said Koner

Koney clicked h tongae. "Gently, host lift your hand upward edgewise, turn it slowly, then pash it down flatwise, slowly. Do you get it

Morrison said, "I understand."

He followed Konev's suggestion and moved up slowly. He caught at Konev's sho

Koney said. "Now, look here at the combroeranth. Do you use where we are at this moment?"

orrison found himself looking at an en onal effect. It consisted of situators rills branching outward in such a way as to form an exceedingly intricate tree. In one of the larger branches there was a small red dot, moving dowly and progress

Morrison said. "Can you give me a broader view so that I can place this section." Koney, with another click of his tongue, one that might have signified impatience, expanded the view. 'Does this help?'

"Yes, we're on the edge of the brain." He could recognize the individual convolutions and flowares. "Where do you plan to en?"

The picture magnified sourcehat Knew said, "We'l curve off hare into the interior of the source's lays - the gray matter. And when Hd like to hand its, by this rount' - he same the associat rapidly and Morrison strength do tandau them in his mind into Baglish - "in this area how which, if There and your paper correctly, is a crucial node of the neuroscic surverse.

"No two brains are exactly adda," said Montion. "I can pin down nothing with cornainty, all the more so if the particular brain in question is one I have never enaded. Still, I would say the area you're heading for looks hepeful."

'Good, as far as that yous. And if we get to my destination, will you be able to tell more accurately whether we are at a crossmade where several branches of the network meet or. If not, in what direction and how far such a crossmade might be?' "I can try," said Morrison cautionsly, "but please remember that I have made no guarantees as to my abilities in this connection. I have not offered you any promises. I have not volu

"We know that, Albert," said Boranova, "We ask only that you do what you can."

"In any case," said Koney, "that's where we're going as a first approximation and we'll get there before long, even though the current is dowing. We are, after all, almost down to capillary size. - Stop yoursell is, Albert. I'll ist you know if I need you.

Morrison managed to operate the seat belt without any help, proving that even small triamples can be eweet.

Almost to capillary size, he thought, and looked out through the walls of the ship. The vessel wall was still at a conformable distance, but it had changed in appearance. Earlier, the senably polasting walls had been rather fearmeless. Now, however, Morrison could make our so pulsing and the walls were beginning to look fairely tiled. The tiling, Morrison ratified, consisted of the cells that made up the thinning walls.

He could not actually get a clear look at the tilling, either, for the red corpuscies were in the way. They were now well bags nearly the size of the ship. Occasionally, one ballooned pust the ship at close quarter and was pushed elastically inward at the point of contact, without undergoing any visible harm.

One time a small ensure was left behind. For how the contact had been just a little too forceful and a line of miniauritod molecules had been formed against the hull, Montion thought. The unsure little off quickly, however, and disolved in the surrounding fluid.

The planelets were another story, since by their very nature they were much more fragile than the red corposeles. we made a based-se cellision with the day. Or putage it had been dowed by a cellision with a net corporate on the day had oversities it. The power of the ship penetrated douply and the data of the planeta penetrated douply, making with the planeta and then forming its two or three long strings that majed with each other. They chang to a portion of the day's half for quite a time, mails

Merrison writed to see new enidence of a clet forming. None did

Minutes later Metricon user, up alraed, a milly fog that womed to fill the blood vessel from wall to wall, polaring and undulating, Inside it were dark granules that moved stadily from one side to the other. To Montoon, it looked like a malignant messare and to coddity help but cry alond in

CHAPTER 10 -- CAPILLARY

If you want to know whether water is builing, don't test it by hand. -- Deathney Senior

Derbury tamed his head, starfied, and said. "It's a white cell. Aftert, a leacecyte. It is nothing to be bothened about." Morrison evallowed and felt distinctly amoyed. "I know it's a white cell. It just caught me by surprise. It's bigger than I

Try nothing," said Dohnov, "A nicce of numernickel, nully, and no biever than it should be. Write inst smaller, And even if it were as his as Moscow, so what? It's inst floating along in the bloodstraam as we are,"

"As a matter of fact," said Kaliinin gently, "it doesn't even know we're here - I mean, that we're arything special. It thinks we're a red corpuscle."

Koney seemed to be addressing the air in front of him in an abstracted sort of way, saving. "White cells do not think."

A flash of resemment crossed Kalinia's face, flashing it slightly, but her voice remained even. "By saying think,' Albert, I am memby using a figure of speech. What I mean is that the white cell's behavior toward us is that which it would display toward a red corpusche Moreover, care and the large billing of a state of the large billing of

That moment of beside-the-moint speculation effectively remeved the unaviness that the white cell's aresearance had introduced and Meerison numred, in his mind, to Kalinia's stamment.

"Does it act as though we're a red corposele because we're the right size for it?"

That mark hele' sold Kallain. That it's not the real masses. You indee a red connected to be a md connected because we see it. The white cell indees a md connected to be one because it unsees the characteristic content of the electromannetic notemen on its surface. White cells are tailed - that is instanded - to interest the survey of model - to interest that the instance of the electromannetic notemen on its surface.

'But this ship doesn't have the electromagnetic pattern of a red corpuscle ... Ab, but I guess you've taken care of that." Kalinin uniled in centle self-satisfaction. "Yes, I have, It is my speciality."

Denhave said, "That is it, Albert. Our little Sophia knows, completely in her head" - he topped his right tomple - "the exact electromagnetic parton of every cell, every bacterians, every virus, every proteines and the exact electromagnetic parton of every cell, every bacterians, every virus, every proteines and the exact electromagnetic parton of every cell, every bacterians, every virus, every proteines and the every cell every bacterians, every virus, every proteines and the every cell every bacterians, every virus, every proteines and the every cell every bacterians, every virus, every proteines and the every cell every cell every bacterians, every virus, every proteines and the every cell every cell every bacterians, every virus, every proteines and the every cell every cell every bacterians, every virus, every proteines and the every cell every cell every bacterians, every virus, every proteines and the every cell e Not epite, "aid Kalian, "he how Hope, my compare on apply, And Haw a dote, have the energy of the aicofunction source on place positive and angine descric duags on the high in whatever pattern I doose. The day have the duags pattern of a not compacte an isoff a bott as I can deplicant it, and that is close stough to cause the white cell to max - accordingly.

"When did you do that, Sophia?" asked Morrison with interest.

"When we were reduced to the size that would make us a potential object of interest for a white cell or for the immune apparatus generally. We don't want ambeddes a

A thought occurred to Morrison. "Since we're talking about being reduced in size, why have't the Brownian motion gomen worst? I should think it would batter as more as we get smaller."

Boznewa par in from behind, "So it would if we were summinumrized objects of this size. Since we are miniaturized, there are theoretical reasons that provent Boyenian motion from getting very bad. It's onlying to werey abare.

Merrien thought about 1, then strugged. They weren't going to will kin anything they thought might make him too bace/indepable in the manner of miniaterations and whar did that numer? The Brownian motion had not goven weee. In fact, it had green less resolutions (or was he jot getting und to it?) and he had to objection to that. That make it, as Bonneros and, nothing to werey about

His attention shifted back toward Kabinin. 'How long have you been training in this field, Sophia?"

"Since my graduate days. Even without Shapitory' come, we all knew the time would come when a trip through a bloodstream would be needed."

"You might have planned an automated crewless ship."

"Someday, perhaps," said Bonanova, "we will, but not yet. We cannot, even now, make the automation equivalent to the variability and ingensity of a hum "That's trues," said Kallinin." An antonumed parture maker would place us in the red corpuscie pattern as a way of following the path of least noistrance, and it would do latite more than that. After all, it would be a useless express and pathaps an impractical exercise abopether to try to instil in

n vare of that," said Morrison, "but don't do it, please."

"No fear," said Kallinin, "I won't."

But Boranova's voie ounded in sudden -- and uncharacteristic -- encitement. "On the contrary, Sophia, do that?" "But, Nataba -- "

'I mean it, Sophia. Do it. We haven't tosted your instrument under field conditions, you know. Let's try it." Koney mattered. "That's a waste of time. Natalya, Let us first set to where we're eoine."

Bonaneva said, "It won't do us any good to get there -- if we can't enter a cell. Here is an immediate opportunity at hand to see if Sophia can control the behavior of a cell. "I agree," said Durhney boisterously. "This has been a remarkably uneventful trip so far."

"That's the best kind. I should think," said Morrison,

But Dezhnev held up a disapproving hand. "My old father used to say: 'To want peace and quiet above all else is to hope for death." "Go ahead. Sophia." Boranova said firmly. "We waste time."

Kallisis becaused a bare memore - the time required, perhaps, to remember that Biccanova was captain of the ship - then har hand Bickared over the controls of har device and the configurations upon the television serven altered markedly. (Monison admired, is an approbasis) word of way, the speed with which the dd is Merrison lifted his eves to the white cell alread, and for a moment he saw no chance. And then it seemed as though a fit of trensblar overtook the moment and Dachney whiseered. "Also, it recoverizes the presence of its rerer." At the extreme forward end of the white cell, its substance seemed to bege toward and all around them in an uneven citcle. At the same time, the substance in the contex retranted as though it wen being socked in. Morrison envi meter's jews preparing for a meal.

Koney said "It works. Nataba: That custom sheed is preparing to consider and energy as "

Boranova said, "So it is. Very well, Sophia, restore us to the red cell mode." ain Kaliinin's fingers flickered and the configurations on the screen is nearly as Montison's memory could judge) to what they l This time, however, the white cell remained unaffected. Its outer rim was shooting past the ship, which was now heading into the deep central concavit

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Again a damp agains from Resource "Address the blood word of high word work with that in each work that the blood work is findly word work work that the blood work is a strength of the blood
Kalihai sui, "J Akahy villi ja is tuok vidia footon, summar for neglatare ya iala."
Then we share for a moment and has Researce with a half-stanghole say. We four show someholog helds - well, have - and you have a well as 1 for har i would be have for all of a 1 would be ha
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"And none of us have -- which is why we didn't think of it. In that case, Albert, unclusp yourself and let us get this sait on you."

"Some," said Morrison, "That's why I thought of this,"

"On me?" Morrison spatnend. "Of course. It is your idea and you're the one with experience:

"Not in the Noodstream." "No one has experience in the bloodstream, but the rest of us don't even have it in water." "No," said Morison surgely. "This thing is your help -- you four. Eve done the thinking that got you out of the white cell and Eve just done the thinking that could get you out of your present fix. That's my share. You do the doing. One of you "Albert," said Boranova. "We're all in this together. In hore, we are neither Soviets nor Americans; we are human beings trying to survive and to accomplish a great task. Who does what depends on who can do what beer, and nothing more Morrison caught Kalianin's eye. She was smilling very slightly and Morrison thought he could read admiration in that smile. Groaning softly at the folly of being influenced in so childish a manner by a hunger for admiration, Morrison knew he would agree to this madness of his own suggestion Bonnova had the unit out. Like the ship instif, it was transparent, and, except in the head portion, it lay writikled and flat. To Montoon, it looked ampleasantly like a He-tated caricance of a human being drawn is coding by a child. He mached out to touch it and said, "What is it made of? Plastic wrap?" . Boranova said, "No, Albert. It is thin, but it is not weak and it is exceedingly rough and inset. No foreign material will cling to it and it should be perfectly leakproof. "Should be?" echoed Morrison surdonically. Deathney interrupted. "It is leakproof. I seem to recall it was tested some time ago. "You seem to recall it." "I blame myself for not having checked it personally in going over the ship, but I, too, forgot its existence. There was no thought -Merrison bitterly exclaimed. "The sare your father must have told you once that self-blame is a cheap renalty for incompetence. Arkady." Durhney replied, raspingly, 'I am not incompetent, Albert.' Beamva cut in. "We will have our fielts when this is all over. Albert, there is nothing to worry about. Even if there were a microscoric leak, the water molecules in the observa cotide are far lareer in commission to the suit than they would be under normal conditions. A leak in olecules, but that same leak in a miniaturized suit would not allow those same water molecules, now elants in commarison, to enter "That makes sense," mattered Montison, looking for solace. "Of control," said Bonnova. "We can insert a smadard oxygon sylinder right here - small size, but you won't be out here for long -- an absorption casister for carbon disside here, and a battery for the light. So, you well be equipped "Just the same," sold Koney, turning to look at Merrison dispassionanty, "you had better do it as quickly as possible. It's warm out them - thirty-seven degrees Coluins - and I don't think the sait has a cooling mechanic "No cooline mechanism?" Morrison looked at Boranova cuestioning Benners thereof. 'It is not care to cost as object in as industrial median. This entire body, which is a large as a meaning to us, is all as constant temperature of this-serves. The dub bielf can be costed by means of the microbiole entires. We can be bill as estivated device into the stric but that, as we have worth by our for very loss. - Self, was had bener take of the usit very worth be Morrison demarted. "It's not heavy, just a thin layer of cotton." "If you perpairs with it on," said Boranova, "you will be sitting in wet clothes when you return to the ship. We have no stage clothing we can ofter you." "Well, if you insist," Morrison said. Then he removed his sanduls and tried to strip his one-piecer off his logs, something which proved surprisingly difficult in his nearly weightless state. , Boranova, noting his disconfort, said, "Arkady, please help Albert into the suit." Durhney worked his way, with difficulty, over the back of his sear to where Morrison floated, in a cramped porture, against the hall of the ship. Durhner helped Morrison into the logs of the suit one at a time, though the two, working together, were scarcely loss classry than Morrison alone had bean. (Diverything about us, Morrison thought, is designed to work in the present Derbary maintained a running commemory as they straight "The material of this usit," he usid, "is precisely that of the ship itself. Entirely socret, of course, though, for all Harow, you have a similar material in the United States - also secret. I am sure." He passed on a small note of inquiry. "I wouldn't know," nummed Marrison. Bichan kge wolked in way into a sheart of this plantic. It didn't teck to bis kge, but moved woodby along, yet it somahow gove the impression of being cold and wet without, in walky, being either. Bu date wet encountered a surface quite like that of the plantic suit and he didn't know how to integr Derbney said, "When the seams close, they become virtually a single piece of material. "How do they open again?" The electrostatics can be neutralized once you're back in the ship. For now, most of the statistics and a signify charge, balanced by a positive one on the inter surface. Any portion of the sait will cling to any positively charged area on the ship's surface, but not so eroughy that you can't pull loose." Morrison said, "What about the near end of the ship where the engines are?" You need not be concerned about them. They are working at minimum power for our cooling and likenization and any particles emerging from them will pus through you without noticing your presence at all. The oxygen cylinden and wars absorption work assessmentally. You will produce 'One must be grateful for some technological blowings." ad said darkly, "It is well-known that Soviet spacesuits are the best in the world and the Japanese are second. "But this is not a spacesuit." is modeled on one in many ways." Dezhnev made as though to pull the headpiece down. "Wait," said Morrison. "What about a radio?" Derhnev passed. "Why would you need a radi "To communicate." "You will be able to see us, and we will be able to see you. Everything is transparent. You can signal to us." Morrison draw a deep breath. "In other words, no radio," Boranova said, "I am sorry, Albert. It is really only a very simple suit for small tasks." Morrison said sourfy. "Still, if you do a thing, it's worth doing well "Not to bureaucrats," said Dealmey. "To them, if you do a thine, it's worth doine charafy," There was one advantage of irritation and annoyance, thought Morrison; it did tend to wipe out fear. He said, "How do you plan to get me out of the ship?" Derbary said. "Right where you're standing, the hall is double." Morrison turned sharply to look and, of coarse, west floanduring. He could not some to tensember for three seconds running that he was essentially weighties. Durhner helped him control his body at some cost to himself (We must look like a pair of cloves, Morrison thought. Merrison found himself staring, at last, at the indicated portion of the half. New that his attention was drawn to it, it did were faintly less transmort than the other northon, but that middt well have been his imagination Durhney said, "Hold still, Albert. My father used to say: 'It is only when a child has learned to hold still that it can be considered a cmanue of sense." "Your father was not considering zero-gravity condi-"The air lock," aid Duthers, ignoring Merrison's commer, "to modeld on the type we have in our inare method secondaryse. The inner layer of the lock will peel hack, then more around you and soil. Most of the air between the layers will be ended our - we car't affeed to water air - which will give you a sering funding, so don't. This the ouer layer will peel open and you will be ended. "Wait! How do I get back? "The same way. In reverse." ow Morrison was closed in comp helped unsettle him, as the coldness of fear began to wipe out the saving sensation of anger. Deriver was making him series the hall and Knew horize managed in term shout in his and was holding. The two women remained calcula is their and your station intensive Morrison did not for a moment fuil that they were starting at his holy; he wished they were, in fact. That would be natarively beings. He was absolutely comins they were starting to set if the air lock would work, if his sait would work work would work would work. He wanted to cry out and call off everything, but the impulse to do so remained only an impul He first a slippery motion behind him and then the whipping of a transparent sheet before him. It was like the seat beht clasping itself around his waist and cheet, but here the sheet enclosed him entirely, head to too, side to side. It clang to him more and more tightly, as the air between was pumped out. The material of his suit seemed to strain outward as the air inside it pushed against the developing vacua And then the outer layer of the hull behind him whipped away and he folt a soft threst that sunt him tambling outward and into the blood plasma within the capillary. He was out of the ship and on his own. Goine there may be most of the fan -- but only if you get there in the end. -- Dephacy Senior Immediately, Morrison for the enveloping warmth and gasped. As Konev had said -- the temperature was 37 degrees Celsius. It was the heat of a oveluting summer day and there was no escape. No shade, no breeze. Be based present, prints for basedings, Clarify, Baseding All of them - red connucle, plantet, himself, the ship - were movine alone with the small creening current within the casillary. If one indeed by the slow drifting motion of the tillnes in the wall. Merrison wondered why he fish the Brownian motion as little as he dd. Thus was indeed the semation of movement and the other objects in sight appeared to translite. Even the tile marks of the capillary walks seemed to shall somehow, in a rather peculiar manner. But there was no time to be keeply analytical. He had to set things done and set back within the shin. He was a meter or so from the ship, (A meter? Parsity subjective, How many micrometers - how many millionthe of a meter was be separated from the ship in real measurement? If didship passes to try to work our an answer to the quostion.) He twiddled his flippers to get back to the ship. The plasma was distinctly most viscous than suzurater - unp The heat continued, of course. It would never stop while the body he was in remained alive. Montson's forehead was entities moist. - Come, he had to set started. His hand reached out to the place where he had left the ship, but it teached nothing, it was almost as though it were pushing into a soft robbery cushion of air, although his eyes told him there was nothing between that portion of the hall of the ship and his mitted hand encept, at best, a film of fluid. A moment of thought and he saw what was happening. The outer skin of his suit carried a negative electric charge. So did that portion of the hull he was touching. It was repelling him There were other rootions of the hull, however, Morrison slid his hands alone until he was aware of touchine the risotic. That was not in itself ensuch, however, for his hands moved alone the area as though it were infinitely sliceers. And then, almost with a click, his left hand frace. It had passed a region of positive charge and remained in place. He tried to pull free first by a gentle backward pub and then mere frantically. He regist as well have been rivened to the oper. He felt further along with his right hand. Anchor that and be might be able to pull his left hand free Click. Anchored now by his right hand, he realized at his left. Nothing harpened, He clane to the hall, crucified there. Drops of perspiration rolled down his forehead and collected in his ampits He shouted usalessly, wiggling his legs in an ocstasy of effort They were looking at him, but how could be evenue to his transed hands? The red corruscle that had been communion to the shife since he had emerged from it drifted closer and nudered him senior the hull. His cheet, however, did not cline, Luckily, it was not up analyzed a senior to provide the senior of the s Kallisin was looking toward him. Her lips were moving, but he could not lip-read - not Ressian, at any rate. She did sensething with her computer and his left arm pulled free. Presumably, she had weakened the intensity of the charge. He model his band in what he horsed would be interrented as a contact of thanks. New it would only be necessary to work his way back, nonitively charged area by restricted charged area, until he mached the near of the data. He began the motion and found himself more or loss pinned, but not so much this time by the harsh pall of the electromagnetic interaction as by the soft, pillowy pash of the red corposele. "Get back?" shouted Morrison, but the red corruscle knew nothing of shouts. Its role was parely passive, Morrison threat at it with his hands and used his log flippers to pash harder. The elastic surface film of the red cell gave and bellied inward, but resis ted more strengly, the more it gave until, finally, Morrison was pushing asslessly and, as he tired, was for He passed to cath bits bands, which was difficult, for and resus-denached as he was. He wouldered whether he would be disabled fire by delphasies or by the low or bits which would ensity come over bins if he could not get rid of the base bits own body was producing -- and all the more to because of the effect he was making to the himself of the red cospaced He lifted his arm again and brought is down, the placet: flipper held edgewise. It cliced through the pellicle of the corpuscie, puncturing it like a balloon. The surface tunnion of the film pellicle the opening wider and wider. Matter enaded - a thin cloud of granules - and the red corpuscie began to shrink. Morrison felt as though he had killed an inoffensive living creature and experienced a pang of guilt -- then decided that there were trillions of others in the circulatory system and that a rod corparcle only had 120 days of functioning anyth Now he could pull back toward the rear. of event in this corner and that of the suit, rolling arm He was back at the max now, back when the differ excessible difference with the differ He was feeling a little dizzy. Physical? Psychological? The effect was the same, either way. He took another deep breath and blacked his eyes as peoplexies leaked into them (there was no way be could breach it array and again the first a spaces of tary against the fools who had designed a unit only microscopically bener than none at all). He from the handholds against the hall and paddled his foot. Would this work? The mass he was trying to turn was only micrograms in quantity, but he had at his disposal - what? Microsrgs? He lazer that the square-cube law give him a tremendous advantage, but how much efficiency could be par into his pads? But the ship messed. He could sell that by the metions of the tiling on the capillary wall. He could now much that wall with his feet, so the ship must be lying across the capillary. He had surned it 90 degrees When his feet teached the capility walk he pushed with perhaps injudicious surgery. If he were to punch a hele in the walk, the results night be includably had, but he was area he had little time left and he could not think beyond that. Formanely, his feet rebended as though they had surk into spongy rebler and the ship termed a bit faster Morrison looked up Nearly, squaring and willing himself to see. (He was almost past the ability to branche in the squalid damp hear of the unit's intension.) It was another red corpuseds. Startly it was another red corpuseds. They were as closely spaced in capillaries as - as case on a basy city struct This time he did not wait. The flipper on his right hand came down at once, carving open a vast wath, and this time he did not spend a microsocoal of worry over the member of an innocent object. His legs worked again and the obje move He hered it was shifter in the same disccion as before. What if he had managed to twist himself unside down in his mad attack on the red consucle and he was simply reaching the shie back into the wrone direction? He was almost beyond carinetees and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and attack on the red consucle and he was simply reaching the shie back into the strength and th The ship was now parallel to the long axis of the capillary. Gauping, be mid to study the tiles. If they were moving forward toward the prov of the ship, then the ship was moving backward with the carrent and it was facing the junction of the americal

first Eliteration

Deduces said, "To each his own job. I will take you them, with my expent handling of the ship. Once them, you will get the thoughts - or Albert will, if you cannet. And if you do as well with the thoughts as I do with the ship, you will have achieve to say -

Those," said Koney with a score!. "that you don't think this is something to loke about, you cloven. That node is where we can hope to detect Proor Shanizy's thoughts. Without that, this semantre will come to nothing."

The atmosphere lightened perceptibly at once and Dezhnev said, "In that case, we will see how skeptical we need be of the skeptic node, when we reach it."

Of thought to dry is depti English, "to it Medices patiently. This cleanse is instrumentated and one uses Grank on Latis when poosible. The Grank weed for thought is Varyful." I has given as a Varyful of block and the set indicates a babband debtage antibade. This 'because the very set of dash timples. Sensity you all locow that the most efficient way of accepting the foolid deparate fielded as as by social ethodes yo to use

Dethery mickens, "Skepic node! No wonder your commynes an skepical of the whole notion, Albert. My father used to say: People are randy enough to longh at you. Don't make famy faces is order to encourage them.'- Why ddn't you call it 'thought hode' in simple Resonant' It would have sounded much better.

There was an uncomfortable effence at that, whereapon Morrison (having left is there for just long enough, out of a faint malics - he owed them that much) said, "As human beings in all nations know."

"And do you begin to doubt it now, too, Albert?" *Caution is a massnable scientific animale, Yari. My concept of the skeptic node makes some in the light of my observations, but I have never been able to test the matter directly – that's all – and I do not with it said inter

Koney said, "According to you, there should be sight such nodes, four on each side. This one, however, is the largest and most insticate on the left side and therefore stands the best chance of giving us the data we need. Am I right? "I think so," said Morrison cautiously, "but please remember that my reasoning has not been accepted by the scientific community."

Merrison redded. "Please remember that I've located them in human beings only indirectly, judging from my findings in animal brains. Still, if Tin correct, that should be the superior external skaptic node."

Mention's list hand dipped off the smooth scenare of the head of Konserv's care and his stempt or make up for the twood his intens cares is hadrand on the compand fugure of his diph hand. His labered to sight finand request as he draught, carepoly, that are the improvement that must be intended as later version of the dip would be backhold on the sum and in other emargic cares. He said, pasting, "And where will this capillary take us?" Koney said, "Directly to one of the centers which you believe to be a cr es of abstract thought. -- Let's cut down the scale of the cerebrograph again. Right here."

Know lookal up and uid, "Counting and dual recipring, See here. If we cert down the scale of the combrograph, this is the arteriole we've been following off the countil. We took this branch and that one, and then in's a matter of counting the capillation as they branch off on the right.

He flane open his seat belt, the first multy decisive movement he had made since returning to the shin, and stared rebelliously at the perturbed Kalilain as he did so. He pushed himself gently upward into a float, holding himself in position to look over Konev's shoulders by reputed corrections -- first up, then down. He said, "How do you know you are in the right one, Yart?"

Meetion had recovered utilicianty to be true of imulation. Outside the transparent half of the ship, the wall of the capillary was strongly tiled and seemed fairly close on all edde. It looked vary much like the other capillary, the one in which he had turned the ship around. He said. "I want to see the cerebroeranh."

Morrison obligingly said. "Well-done, Arkady," and into the candilary the ship went.

"Then I so make it," said Koney, looking sullen. "Arkady, can you get near the wall on our right and catch the current that turns into the capillary?" Akady stal, "To beam mining the atorphysics and three split results for a play with the split result is a play by a stal atorphysics, para is did in the previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls," A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls, "A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls," A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls, "A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls," A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls, "A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls," A broad gait crossed in high previous cases when we had to bhanch still Tach time I managed to see the same atomatic controls, "A broad gait crossed in high previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previous cases when we had to bhanch still tach previ

"No." said Boranova with authority. "Yuri can make this decision his own restonsibilit

Kalijaja, carefully addressing Boranova, said. "Albert is in no condition to be badwared with combroaranhs. "Lat me try," said Montison, straggling with his seat belt.

"Exactly," snapped Konev, "so please step, opecially since we are now appreaching the capillary that we should be entering. Albert, lean over and study the carebrograph. Do you agree?"

milly/he vert on, "have is no predicting when a periodic minimeter particle minimeter of a bet it is a good segar that above all will be byond the mose when it happens. At for the few - them are above a few - who map use of minimeterial minimeter at eace, Shapirov's body can above them -

. "Surely," said Montoon, "they do not stay minimatized. We are not initiating a process, are we, in which the Universe will gradually be filled with minimatized particles as humanity proceeds to make use of minim The we did, what here's All human activity for believe of years could net add a significant quarted or mice a waring band, but Dontow was abuyes had to oney when in oral Doc

"And the miniamrized particles - atoms and less - simply escape through Shapirov and through the Grotto and through the Earth and end in outer space, as you told me." "Again -- what follows?"

"Yes," said Arkady warily. "And if that is so, what follows?"

Phine reasons was centralisy what Morrisons warmed. Since the meetings of brain damages, be had been useting binnedif, thinking, trying to come to conclusions. Bie said, "Adady, when the microfision engines are vorking, you are converting minimutated hydrogen izes minimutated bidium, and sense of the bilium escapes along with minimutated water vapor or other materials doub

"That may be so, Yard," said Bocanova, clearly indignam, "but at the time we were bringing Albert is, I did not thick of that, but only of uaving his life. I cannot believe that even you were cold-blooded enough to fed no anxiety for a human being who was relating his life to help us, except interfar a we needed him." riously," mattered Koney, "plain reason is not wanted.

"Don't bother," said Konev indifferently. "We need you and your computer program. If we had left you out there, the project would be a failure, even if we found the right cell."

He said, "I thank not only Arkady but all of you for pulling me in and caring for me."

He tied to accurrate, to gate some some of miles, the vase off in the ship, He vase will be to of a bacteriar, more of bact, the more big with other, the more big with other big with oth

"That's all it does amount to," said Kallinis, smiling, "but oven a droplet is an extra supply and since you brought it in, you desarve an extra supply. Logic is logic." Merriesa laughed and sacked up additional ware greedily, squeezing it out of the finishie cominiser attraname-typic. He was beginning to fiel comparatively normal — more than that. He was fueling the kind of dreamy consentant that comes from being fived from the inviterable

"Once miniaturized, it can't amount to more than a droplet."

'Of come you as. After ' aid Kalinia. 'You meet than your date is your

Morrison foll infinite rollef. He would not have to so out again. He said. "Thank you, Arkady." Then, rather bashfully, he added, "You know, Soshia, I'm will thirty." At once she handed him the bottle, but he hesitated. "Are you sure I'm not drinking more than my share, Sophia?"

. "True enough," said Dazhnev, waving his hand. "I give him full credit and the Order of Lenin -- if he will take it."

He eringed triggethantly, "Wasn't that well-done?" "Well-done," said Boranova, "but impossible without what Albert had done first."

nt wall in which the tilling was much less Metrics usid, "The capillary comes off the artesisk like the branch of a rose at an oblique targle. We go through that opening up alsoal and we'll be pointed three quarters of the way upersum - and once we nodge the far wall, we'll beance off and be moving fully upersum. Dehtery charled. "My old father used to up; Tkiff as imagination is score than none at all. Wireh, Brie Albert, Son, J will wait used to as almost at the opening and I will threshe down the motor to that we make our way up the current way dowly. Now car day ticks, its current out of the capitary -- i listic more -- all now the main e blood catches us and reaches assisted the news and turns us - and I reach out a little more - and it turns us a bit more - and I come out the whole way - and behold I've been turned. I am heading dow

"Gotting better," said Morrison, shaking her hand off rather queralously. He was peering forward and relieved to find that his vision seem

Morrison looked up and felt a twines of pain. He must have estimated, for Kalijain put a cool hand on his forthead and said. "How is your headache?"

t won't be anyone, Albert, my friend," said Dezhnev jovially. "Look ahead. We're coming to the arteriole now.

u car't turn. You'll be heading back the way you came. The ship will have to be tarned again from outside. It car't be me. Do you understand? It car't be me? Kaliinin put her arm around his shoulder. "Shh' It's all right. It won't he you.

Merrison drack more, then sighted. "That's much better. -- There was something I thought of when I was out in the capillary. Lost a flach. I wanth ufficiently myself to indextand my own thought." He best his head and covered his syns with his hands. "This net sufficiently myself to remember it now. Let use thick

"Yes," said Dechney. "I'm using the motors - expending energy."

Morrison's nonh clicked as his month snapped shut. Then he said, forling a chill in the pit of his stomach. 'Is that what you thought?' "Never mind," said Kaliinin insinuatingly. "It didn't happen. What was your thought, Albert? You still remember." It was half-coefficient statement, half-hopeful question

. And then Morrison said with a sigh and a rather massive cleaning of his throat. "Yes, I remember it" Boranova sighed also. "Good, then you have your memory." "Of course I have," said Morrison pettichly. "What did you think?" Koney said coldly, "That a loss of memory might be an early sign of brain damage."

"Yes, I do nemember. We're pushing upstream now, aren't we? So to speak?"

He decided it was. No, he didn't care. Right way, wrong way, he had to get back into the ship.

His last truly same thought, for a while, was that he needed no strength. Up meant no more than down for a weightless, massless body

He was staring at a face. For an interval of time, he did not more the fact that it was a face. It was test a namers of light and shade at first. Then a face. Then the face of Soobia Kalinia

ered to the peace of nonstruggle. Just to do nothing was the highest good. To feel nothing. Then he foll a cool attribute over his attribute over strength attribute. He discovered that the unit had been removed and he was redeal

"I understood that," said Koney. "I lived in the United States, you know. If it will make you feel better, III seach you how to say every one of those words in Resolan "Thanks," said Morrison. "but they taste better in Earlish." He licked his dry lins with a dry tonnue and said. "Water would taste still better. In thirtys," 'Of course," said Kallinin. She held a bottle to his lips. "Suck at it gently. It won't pour when it has no mass to speak of. - Slowly, dowly. Don't waterlog yourself.

He first arms holding him down and heard a voice say, "Don't worry. We car't give you a shower. There's no water for that. But we can use a damp towel. You need to be cooled - and cleaned

Toolish. We'll dry you now. A little deadonant. Then back imo your one-piece." Montion tried to rokes. It was only when he fait cotton against his body that he spoke again. He asked, "Did I turn the ship property?"

orthless. A suit for use in the bloodstream of a warm-blooded animal must be cooled."

His hands were sliding along the walls of the ship. Sticking here. Sticking there. Vagaely he saw the dim figures on the other side of the wall. Motioning. He tried to follow the gestures.

He writeried upward, foreetting why, and a for of darkness came down upon him.

His eyes turned, and difficulty focusing, then he turned his head. "Natulya," he said.

"Yos," said Kaliinin, nodding her head vigorously, "and fought off two red corpuscles most savagely. You were Morrison said hoarsely, "Help me up." He pushed down with his efforws against his seat and, of course, drifted into the air.

"... undignified," he managed, struggling over the syllables

"I foreot," he mathered. "Well, strap me in. Let me sit and recover." He fought down the dizzy feeling, then said, "That plastic suit

"We know," said Deshney from his yeat at the controls. "The next one will be." "The next one," spat Morrison bitterly.

Morrison draw his head away from the bottle. "Do we have enough water?" "You must replace what you lost. We'll have enough."

"At least," said Dezhney, "you did what was necessary and the sait made that possible." "At a cost," said Morrison, who then slipped into English in order to express his feelings more accurately

He was not mady to sell his life for success Where? Where?

The first thing Montison sensed was cold A wave of cold. Then a teach of cold.

She said softly, "Do you know me?" Slowly, cruskily, Morrison podded. "Say my name." "Sophia," he croaked. "And to your left?"

"How do you feel?" "Headache." His voice sounded small and far away. "It will go away." Morrison closed his eyes and a

He was brought down.

There was silence in the ship.

They were fading out. Uo? Sienaline ur? How could be clamber ur? He had no streneth.

"It was nearlifile," unid Kenner, "As in Shanistra's case,"

"Your father is better off where he is," said Koney. 'Don't dig him up again."

"Yuri," said Boranova sharphy, "that was an unbearably rade remark to make. You must apologi

"That's all right," usid Duchneys. "My father used to say: The time for officnes is when a mass, once the has cooled down, repeats an insult he has officind in his rage." I am not sure that I can adways follow that advice, but in honor of my father, I will pass over Yarl's empid memark this time." He beer over his controls, his face grin

erion had lormed to the absenction (jot Koney being many - obviously because he was under a great strain) with only had as ear. His mind slipped back to something else, to Deshney's cardres charter and Boraneya He lowered himself into his seat, clasping himself in for stability, and tamed his head toward lloranova. "Natalya? A question?"

"Yes, Albert?" "Those miniaturized particles released into the normal, unminiaturized Universe --"

"Yes, Albert?" "Eventually, they deminiaturize

Boranova hesitated. "As Arkady told you, they do." 780 m T

She shragged. "Unpredictably. Like the radioactive breakdown of a single atom."

"Because it's so."

"I mean, what experience have been conducted? Nothing has ever been mini steed to the extent that we are now miniaturized, so surely you can't know what happens to suc Berneva said. "We've observed events at miniaterizations we have reached and in that way determined what seem to be the laws of behavior of miniaterized objects. We extravolate --*

"." "Enrapolations aren't always trastworthy when they go well outside the realm of direct study."

"Granted." You compared spontaneous dominiantization to indicactive breakdown. Is there a half-life of dominiantization? Even if you can't util when a particular miniantized particle will dominiantize, can you tell when half of a particular large quantity of them will "We have half-life figures and we think they are expressions of first-order kinetics, as radioactive half-lives are."

Morrison said, "Can you generalize from one type of particle to another?"

Boranova pursued her lips and, for a moment, seemed loss in thought. Then she said, 'It would seem that the half-life of a miniaterated object varies inversely with the intensity of mi 'So that as we are miniaturized to smaller and smaller sizes, the less time we are likely to remain miniaturized, and the smaller we are to begin with, the less time we are likely to remain miniaturized."

"That's right," replied Boranova stiffly.

Morrison looked at her enzyely. 'I admire your integrity, Nandya. You're not anxious to tell me things. You don't volumeer information. Still, you draw the line at misinforming me." Boranova said, "I am a human being and I tuff lies on occasion out of necessity or out of defects in my emotions or personality. But I am also a scientist and I would not twist scientific fact for any but the most compelling reasons.

"Then what it amounts to is this. Even this ship, although it is much more massive than a helium nucleus, has a half-life." "A very long one," put in Boranova quickly.

'But the fact that we are so intensely miniaturized has curtailed this very long half-life

"Still leaving it long."

'And what about the individual components of the ship? The molecules of water that we detail, the molecules of air we breathe, the individual atoms that make up our body? They could have - must have - very short --

"Not" usid Bocaroous forcefully, sensitive to find rolled is being able to dance where it dank with corrective send back as a prove frame of the advectory where it danks with corrective and has a part bit of deministration to mark. Then ministrationation for non-negative sense or nearly at rest, relative to send other. As estanded body - secks of the dails are grave. "Ab," said Morrison, "but when I was out of the ship and out of contact with it, could it be that I was then a separate particle with a much smaller mass than the ship and its contents and that I had a min arization half-life much smaller than we have now?

"In not sure," said Borneys, "whether the distance between yourself and the ship was error ensuch to make you a senarate body. Possibly it did, for the time you were not in contact "And I then had a shorter half-life -- much shorter."

"Possibly - but then you were out of contact only a matter of minutes

"Well, then, what is the half-life of this ship at the present level of miniaturization?" "We can't really steak of the half-life of a single object."

Yes, because half-lives are statistical. For any particle, deministration can come, resonanceously, at any time, even after a vary short time and even though the half-life of a large number of similar particles would be onits long Tor spontaneous deminia urization to come after a very short time when the statistical half-life is long is extremely improbable."

"But not impossible, is it?"

"No," said Boranova. "It is not impossible." 'So we can suddenly deminiatorize in five minutes, or even in one minute, or even as I take my next breath.

"In theory."

"Did you all know?" His eyes daried around the ship. "Of course you all knew. Why was I not told

Branners uid, "We are volument, Abert, working for science and for our rankes. We know all the dangers and scorp them. You have been forced into this and you duit have the motives the dates is. In semed possible that if you know all the dangers, you would have indexed to eart the day volumently under any prevanism or that, Noing brangt on band duity by force, you would be alsopher underso to so out of door -" Ste panel. 'Out of sheer fright, you were going to say,' said Montson. 'Sumly I have a right to be afraid. Then

Kalisin instrumpted, her voice a little shell. 'It is time to sup happing on Albert's fact, Nazalya. It is he who litt the ship is an inadequase sait. It is he who instructed the ship accound at the shid of his lift. Whene was his fact then? If he full it, he bothed is inside and didn't let it prevent him from doing what had to be done."

Deshnev said, "And yet it was you who did not besitate to say, in the past, that Americans were all cowardly." "Then I was around I was speaking enfulty and I ask Albert's partice."

It was at this point that Morrison caught Koney's ope. The man was resisting around in his suat and glowering at him. Morrison did not present to be a master at reading facial expressions, but folt that he could, at a glazes, tell what was alling Koney. The man was judges -- Indonedy and quite impressively judges.

The ship continued in draw way ulong the capillary struct the destantion Kener had marked set: the darptic capit, was structured with a structure and the st

In most cases these were madged to one side and the red corposedes then relied backward between the ship and the wall. Occasionally, a red corposede would be met too near dead-center and it would then be pushed d for a while until it burst. The debtis would flow backward, larving the ship's hall summarked. With at least five million cospuecies in every cabic millimeter of blood, it didn't matter how many were disrupted an

Merrison deliberaryly thought of the red cells, rather than of the chance of operations deministration. He knew them was no approxible chance of exploding convent in the next few moments and, even if it happend, it would shapped mean backets. Durth by field bein would take place so quickly that them would be no conceivable way of sensing it.

Not long before, he had been heating much more slowly in the bloodeneam itself. He had felt himself dying. After that, instantaneous death had no serves

But he reeferred to think of other things just the same.

Konev's look! What was seething within him and tearing

anart? He had abandoned Sophia with the utmost cracity. Did he really think the child definitively and immovably in place. Pathological. Think of Lonnes in The Winney's Taik. Stakespace always got those things right. Knew would push her zonzy and hase ber for the wrong he bad done her. He would push her zonz and hase ber for being pushed - and be jushese And she? Did she know of the judiousy and play upon it? Would she deliberately turns to Morrison, as American, to ture Know into ntip?? Tenderly parting the American with the vest towed. Defending lims at every sup. With Know, of course, a witness to everything.

Morrison's lips tightened. He didn't like to be a termis ball, batted from one to another in order to produce maximum pain.

It was noted the bandway, after all, and he shouldhot take takes. But how was be going to not the older. Stephin Kainin was an attractive vorume who reacted with clean corresv. York Know was a forwaring ensary man who maced with a compressed builing of anger. He could nether help Haing Sophia nor help-dividing York

He then noted Boranova staring at him gravely and wondered if the were minimerpreting his thoughtfulness and silance. Did the fed he was brooding about the possibility of death by minimuzzation -- which he was manifully stying not to do?

It seemed so, when Boranova underlay said, "Albert, none of us are reckless. Three a husband. Three a son. I wate to go back to them alive and I iterated to get us all back alive. I wate you to understand that

'In sure your intentions are cood,' said Morrison. 'but what can you do assist a resulbility of deministratization that is streatments, uncredictable, unstornable?'

'Spontaneous and unpredictable, I agree, but who said unstoppable?'

"Can you stop it, then?"

Tcan try. We each have our jobs here. Arhady manageven the ship. Yuri directs it to the destination. Sophin gives the ship its electric pattern. You will study the baia waves. As for ms, I sit back here and make decisions – my major decision up to now was a minker, I admit that - and I wash the bear flow." "The heat flow?"

"Yes. Before the domini tration takes place, there is a small evolution of beat, characeutrici in pattern. It is that emission that is develoiliting, it is what type the delicate balance and, after a small delay, scawe the process of deministration. When that happens, if I am fast enough I can intensity the minimum field in such a way as to rank-out the heat and monthfield the me

Morrison said dabiously, "And has that over been done - actually been done under field conditions - or is it simply theory?"

"It has been done -- under much smaller intensities of miniaturization, of course. Still, I have trained at this and my reflexes are sharpened. I hope not to be caught short."

"Was it spontaneous deminic arization that put Shapirov into a coma, Natabya?

Benzers beined. We der nub have whether it was aus unformaties encourser with the lave of names encourser with the physics and mathematics of names names lave being and the physics and the physics and mathematics of names names of the physics and the

"Of course."

Deahney broke in, "Natasha, we have reached the skeptic node -- or so Yari says."

"Then come to a halt," ordered Boranova.

Coming to a halt took a while. erison noted, with some mild surprise, that Dezhney did not seem concerned in the process. He was checking his instruments but was making no effort to control the motio

It was Kalinia who was deerly involved now. Merrison looked to his left, enabling her as the best over her instrument, her hair fallar forward but not lose encouch to est is her way, her even instrument carooning the keys of her communer. The enablic natures on the screen due was watching made no sense to Morison, of course.

"Arkady," she said, "move fo

"How long will that take?"

"Well, then, what's wrong?"

The feelbe current is the casiliaries bandy stirned the data. Dechney surelised a small here of newser. (Merrison fift his almost massless body move eitheby backward, since there want) sufficient inertia to eive it a mal iods.) The neuron red consuscies between the third backward

"Stop, stop," said Kaliinin. "Enough."

"I cash ston," said Dezhney. "I can only cut the motors and that I've done,"

'It's all right,' said Kallinin. 'These it now,' then added the all-ber-inevitable saving attenthought of 'I think.' These 'Yes, I do have it.'

Morrison felt bimself sway forward very slightly. Then he nearby red corposeles, together with an occasional planelet, drift forward and p

In addition, be became aware of a total constance of the Brownian motion, that faint tormhic he had errow to used to faint be van able to innove it - until it recently had it reduced the same sensation within Morrison as the wakdan constance is whan would have. He strend uncash', it was as though high hard had errored, even though intellectually he laces it had not

He asked, "What's happened to the Brownian motion, Sophia?"

Adaly held is a large hard, held relating in his set to present in plan overal florances. Theses, my capital, They want is to tray each of where we are for two reasons. For, The sending out a canter wave in three directions. They are locating each and using them to locate us in order to set if the location they dominise (New Vith Vehar Yuti capit in b).

"Who can op? A few minutes, at any me. But then my canter waves are not very intense and the location must be precise, so they may have to repost the measurement several times and take a mean and calculate limits of error. Alter all, they have to be correct, for as my father used to op; "Almost right is no better than wrong

She replied. "We're affixed to the wall of the capillary. Albert,"

Merrien noded. If the ship was one piece with the capillary wall, so to speak, the bombarling water meleculos that produced the Reventian motion would loss their effect. Their impacts would work toward moving as mrins section of comparativity inert wall, instead of a size ship the size of a blood planter. Naturally, the rembing would cause

"How did you manage to affix the ship, Sophia" he asked.

The usual discrict fires. The capility wall is party provide party addep biological advances. There are positively and applyoring hanged groups here and then. I had to detect a pattern sufficiently compact, and then produce a complementary pattern on the day to apply to provide wall is positive and water was. The results is that the day is moving with the canner, to make the produce a complementary pattern on the day compact, and then produce a complementary pattern on the day compact.

casions and then we hit a region where there were no suitable patterns at all, so I had to get Arkady to move us ahead a bit into a better region. -- But I made it "If the ship had a reverse gear," said Morrison, "there would have been no problem, would there?"

"True," said Kaliinin, "and the next ship will have one. But for now, we have only what we have."

"Quite so," put in Dezhnev. "As my father used to say: 'On tomorrow's feast, we can starve today.

"On the check hand," wid Kalinini, "If we had a more that could do all we weald want it to do, we would have a strong impulse to use it laviddy and that might not be so good for poor Shapiny. And it would be expensive besides. As it is, we used an electric field which is more quaring of energy than a more would be and the price is only a links more work for me- and what of that"

"Yes yes, Arkady, but that depends on the nature of the problem. What is the second reason we are waiting?" y're going through some observations on Pyotr Shapirov. His heartbeat has become dightly irregula

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Koney looked up, his mouth failing open slightly and his thin checks looking easint under his high checkbones. "What' Do they say it's anything we're doine?" "No," said Dephney. "Do not become a tragedian. They say nothing of the sort. And what can we be doing to Shapiny that is of any importance? We are memby a

"Do I know?" said Dothney, clearly initiated. "Do they sell me? Am I a physician? I just mansaver this vessel and they pay me no mind except as a pair of hands on the controls.

Morrison was quite certain she wasn't talking for his benefit. He said, "Are you always so philosophical?" For a moment, her eyes widened and her nostrils tightened, but only for a moment. Then the related and said with a small smile, "No, who could be? But I try." Bonanova interjected, impatiently, 'Enough chat, Sophia. -- Arkady, you are clearly in teach with the Grotto. What's the delay?"

"Yes, Sophia -- but tell me when to stop." To Morrison, he added, "My father used to say: Thetween not enough and too much is a hair's breadth "More, more," said Kallinin, "All richt. New we'll try," The shie seemed to stick and erain and then it suddenly slid forward and Morrison felt himself threat earthy back analyzes his suat "Good," said Kaliinin. "Just a little less now."

His words were overborne by Kalinin's shrill command. "Askady, move it forward. Gently! Just put forward pressure on the ship."

rrison said, alarmed, 'How far will we miniaturize'

Startled, Morrison did. He realized that every time the outside world seemed to stabilize, he quickly learned to take it for granted and to pay no attention to it

Derbery cald, "Styluis is trying to neutralize the ship's electric charge here and there so that it lats go before the tension damages the wall. And she has to find new areas of anotherers to keep from losing the wall alongether. It's not easy, having to minimute and, at the same time, staying another to be wall

'We'll sneak out once we're small enough. We're miniaturizing again. Look around yeu.'

The current had picked up upool. Or, rather, it hadn't, but the ship had shrank in size once more and objects moving by took correspondingly less time to pass, so that the mind, insteining on considering the ship's size unchanged, interpreted what was seen as a faster current. A nod cell passed by, moving as it had for seeming to move as it had; in the cantel attracy, but despite its speed, it billowed past for a long time, like a quivering whale passing a rowbast. It had grown faint indeed. It was almost transparent now and its edge was fazzy with Brownia

"What's happening?" said Morrison, looking at Kalinin, who shook her head impatiently. She was totally absorbed in her work.

He was becoming aware also of movement, not the tremble of Brownian motion but a harching that was becoming more pronounced.

The tilling was gone - or at least one tile (or crift, as he might as well think of it now) had expanded to the point where it was the only one to be seen. Slipping off behind was the belog of the mackets of the crift, large and thick and growing larger and thicker The ship lurched as part of it slid away from the wall and then lurched again as it slid back.

To make up for the spreading of the red cells, the platelets, and the comparatively mee white cells that had grown into monsters that were now too large to grasp, the blood plasma was becoming far less featurelessly liquid. ad started to turn grainy and now the grains were dowly expanding as they shot past with gradually increasing speed. Montoon knew he was looking at possin molecules and, after a while, it seemed to him that through their while a

He turned his head to look out the other side at the capillary wall to which they were attached.

"In that case - out of the bloodstream at last."

it then he was distracted by Durhnev's voice, joyfully load. Though babble, my children. The Grotto has lacated us and we are, to their enormous astonishment, exactly where we say we are:

"That," said Dorbney, "has passed. An injection Koney said. "Well, then, are we ready to go?"

Dezhnev said, "Let us have communal responsibility. Where we say we are." "No." said Boranova. "I ordered Koney to make the decision on his own restonsibility. The credit is therefore his." Know was not molified. He usid, "You would not have so quickly domanded command separability, Adualy Visuationsvich" - be used the paramytry is a style long out of fashion in the Soviet Union, as though to emphasize the fact that Dednew was the used of a passare, among where, only, the other

Braneva and Kalinia ware base over their instruments. Moreison wachod them for a few moments, base, of courses, lacer cooling of whar was point on Laboratory, who ware a salaxed position (salalar Konev, whose body was tunes, almost ridged with muscle), and oad, "What will be done, Adalahy" Wa call vory well just blast our way out of a blood v

How they happed on secrecy, all of them, thought Montison. Them be caught the look on Kalinin's face. Her month was partly open, her oyehnows drawn together, her figure havening near her lips. It was as though the wanted to ask him to be quiet with a kind of agenining intensity, without quite daring to do to openly.

"It would be nice to think he wasn't, obviously." Koney, from in front of Morrison, said suddenly, without turning around, 'It was your ser Koney threw up both hands and his voice sounded almost boyish. "Exactly when I say we are."

Durhney's smile became an uncomfortable one and his somewhat sellow upper incisors causht at his lower lin-Boranova said in her masterful contraits, cutting off any retort Deshnev might have made, "And Shapirov. What of him?

new of haugh that ingreesed Staptors. Harve's list in a Stauture of excession fully supergegans was a budy station and be weld lists on y it himself. If you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce of the skeptic redul, that you was incide a searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce, a key searce of the skeptic redul, that you was incide a searce of the skeptic redul, that you w

The is not I said Kalimin firmly. for you not i

"I haven't dared," said Morrison, shaking his head. "No one would accept such subjective hallags. The mentioned it is passing to several people - foolbh of me - and the news openal and memly convinced my collingues all the more firmly that I am, shall we usy, sensable. It was only last Standay that Natalya toki me that Shaplere took me seriously, but is in my country, to be usuable, be

"With unionals it would be difficult. Here you reblished these - assessions of unsers?"

in not sure. There are times I have thought I did, but I'm never quite con ci not my imagination. Certainly no one else — with my pregram or any other — has unout anything. Have used the twinkle to track down the despric rodue in the brains of chimpanzees and from that maxoned out where they would be in human brains, but that is not accepted either. It is considered the st oversold on his own unlikely theory. And even using leads into the skeptic nodes -- on animals, of coarse -- I co

"Do you think you're a madman?" No. 1 dord, Septia be revel "source entrinom. You see, after you isshar the ideptic wreve and amplify hune, it is consciouble for the human heain incil might become a moving interment. The wreve may matter the thought from the thicker you are endping directly to you. The belain void centrally have a transcharded difficur review, but would also is a manufactuary individual one. If improved my prepares to full result wave for thought hours, it is a wreat the benance hours and wreat the thought from the thinker you are endping directly to you. The benan void centrally have a transcharded difficur review, but would also is a manufactuary individual one. If improved my prepares to full result wave for thought hours. If the would mean i my prepares to full result wave for thought to use the benance hours and wreat the benance hours and wreat the benance hours and wreat the benance hours and the benance hours are endping directly to you. The benan void centrally have a transcharded difficur review, but would also be a manufactuary individual one. If improved my prepares to full result wave for thours are endping directly to use the benance hours are endping directly to you. The benance hours are endping directly to you. The benance hours are endping directly to you. The benance hours are endping directly and the benance hours are endping directly to you. The benance hours are endping directly and the benance hours are endping d

id hope, but were somehow never quite conclusive. Collearnes who smiled and nodded, but we

"The easiest explanation is that there is something wrong with me, that I am a crank -- if not a madman. I believe that some of my colleagues suspect that to be the an "Have you actually sensed thought?"

The own includes the training the training the training test is vary representation of abstrace theory. It is the samplified is, it anomalied is, modified any respense over and over, and how convinced myself that I an studying thought, the shapt's vary themody. Still, to case can deplease the excelulprism of my vers. Haw, on evened eccasion, disord someone to use my program and my compare - be on of thing Tax using nov-- and they investibly hull' Kallinin was litening gravely. She said, "Can you imagine why no one can deplicate your work?"

shion - "had we proved to be in the wrong ca

notion. There was a grayish dimness about it, so that it looked like an angry thunder

T was an undergraduate then, making the discovery that young women were not entirely unapproachable, which is by no means an units nt thing to find out. In fact, each person may have to rediscover it now and then, I think. -- But never mind that

Kaliinin smiled again. "I imaging that twenty years ago you would have been too young to make the discovery."

"About twenty years ago, it was demonstrated that there was what seemed a matem component in the waves that no one had ever picked up because the instruments that had been used until then did not pick up what we new call "the twistik" live a very upid oscillation of impairs anglined and intensity. That's not a dis

"Please do, then."

"I haven't exten to the hard part yet," he said.

To app. If with willing to har anisotic sections, Load very well describe the nition full. — Where we all hards are non-sections and to app. If with willing to have an excention of unition hards, including to applications, and as a. Los amount all have an encodence and hards, are non-section and to applications, and as an excention and to applications are anti-"I'm having no difficulty understanding this," said Kaliinin, smiling and looking plaused. (She is remarkably pretty, thought Monison, when she manages to get rid of her air of melancholy.)

Kallinin considered, her lips compressed as though in aid to thought. 'Could you explain a bit of it's

"No. It is not secure," said Montion, frownine. "Then are no secure in science, or there should be none - excert that there are structure for referring any structures are structured about what they say, and I am willy of that, too, structures. In this case, though, I man it literally. I cash should be none - excert that there are structures for information."

"Thank you, Advady," will Boraneva coldy, "You, at land, have not. We'll furgive Knew his lapse and part is down to overcasionness in pression of his work. My others are not to more until the Genes gives on the work. If this mission fails because of anything that you work with Shapiror, there must be no opportunity for anyone to usy it was because we did not follow order

Morrison finished her thought without difficulty. "Why was it necessary for me to be abstracted forcibly from my country?

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Koney said savagely, "But he must continue to remain so. He can't let go now. Not now. We haven't made our measurements yet." "We will make them," said Boranova. "An irregular heartbeat is not the end of the world, even Koney pounded the arm of his seat with a clenched fist. 'I will not lose a moment. Albert, lefs begin.' Morrison was starfed. He said, "What can be done here in the bloodstream "A neural effect may be felt immediately outside the nerve cell."

Boranova nodded. "You are right, Sophia."

Morrison said, "TII try, but don't order me around in that bullying tone."

"And by now we should be detecting only neural waves if any are present here to detect -- and there aren's."

"What if some disease happens because we did follow orders? That can happen, too, you know." Konev's voice rose to near-h

"I can find no satisfaction in apportioning blame, whether to myself or to anyone else. It is results that count," said Koney

"Well, then," said Konev, stattering slightly in his passion. "Urge them to let us move as soon as possible and then we'll -- we'll --'

A heavy silence fell upon the five shipmates. Koney's silence was the least quiet. He was quiverine with unrest and his hands would not keep still

Koney granted, as though scorning consolation and pushing it to one side, but it seemed to Morrison that he was noticeably quieter after that.

He was suddenly aware that Kaliinin had addressed him but he had not been listening. "Pardon me. What did you say?" he asked, turning toward her

"Well, then, we have to move on. -- Adcady, tell them we can wait no longer "I carlt do that, Yuri, unless Natada tells me to. She's the captain. Or had you forgotten?

Boranova replied, "The fault will then lie with those who gave the orders."

"An ocean liner, certainly," said Dezhnev. "Next time."

"Take all that as known," said Koney.

"In what manner?" demanded Koney "I describe it in my papers." "But I didn't see what you did." Wordlessly, Morrison repeated the maneuver slowly. "Ob," said Koney.

Konev's right fist clenched. "Are you sare "The screen shows a horizontal line. Nothing else." "It's quivering."

"Yes?" said Boranova. "And then we'll enter the cell. We must CHAPTER 12 -- INTERCELLULAR In life, unlike chess, the same continues after checkman -- Dephney Senior

Kallinin said with a touch of samess, "Academician Shapirov clings but weakly to life in any case. It is a wonder that he has remained in stable condition so long."

Surely not. Why would the neurons have acons and dendrities to channel the impulse if it was going to spread and weaken into space beyond? Locomotives move along rails, subphase messages along wires, neural in "Don't arrise the case. Albert. Let's not accent failure by some fine mocess of reasonine. Let's test the matter. See if you can detect brain waves and if you can analyze them in the mocers fashion."

"What we have to do first," said Montoon, "is to discover whether we can detect anything at all. The workle is, we are surrounded by electromagnetic fields. The mascles are rich in them and each molecule, almost, is the origin point of a

Tan only filling in the time while I carry my device through onne necessary sups. The neural field is characteristic in several ways and by adjusting the company to eliminate fields without those characteristic. I larve only what the neurons peckets. We black out all nicrofields like to and we define the muscle fields in this

"Tits sorry," said Koney, not sounding sorry at all. "I want to watch what you do." He uncheeped himself, turned in his sear, holding on tightly, memoring, "We must have more room the next time."

Noise. Prosibly from the ship's own electric field, which is complex and not entirely like any of the natural fields of the body. I've never had to adjust a computer to fiber out an artificial field.

"Jarme," soid Boranova, "If we are dealine with finement theory. But if you expect to continue working on this project nust the time of a possible caustrophy, you will find that the manner of allottian blame is all-important."

Merrison suck back in bit sears and let bit eyes close. He wendered if he was experiencing barger and decided that he was not. He also wondered if there was a deriver somation of bladder prosent. Then wan't but that did not miles him much. One could always pospone earing for a considerable lingth of time, but the necessity of unitation did not lead in util to quite the same flexibility of choice

"Is it secret, then? I thought it might be."

Kalifinin looked surprised. She said softly, 'I ask your pandon. I interrupted your thought They were worth interrupting, Sophia. I ask your pardon for being inath

"Then if you ask me what is special about my own views, I'm aftaid I can't tell you."

Merrican fult a dim sympatry. To have reached the destaution, so have done just as planned, through difficulties, to imagine one's will at the point of matching success, and to have to four that it will be moved areasy from the asgerty gravping flagues even now - he know the feeling. No longer quite as sharphy perhaps, as once, now that he was ground d

He leaned forward and usid, "Lock, Yart, just watch the red corpuscies. They're creeping alread, one after the other, smally -- and that means the heart is busing and is doing so fairly normally. As long as the red corpuscies more smally alread, sorie units. Denharv said, "There's the blood semperature, too. I've got it monitored at all times and it will have to start dropping dowly, but with determination, if Shapirov law, go. Actually, the temperature is at the upper edge of normal."

"No. I presume you did not advise the action."

"In that case, I acked what it is you do in your analysis of brain waves. I mean, what is it you do that is different from what others do? Why was it necessary for us.-" She passed, clearly uncertain as to how to proceed

"Of course not. I knew nothing of it. In fact, that is why I am asking you my question. I knew nothing about your field except that them are electroneural wave; that electroneural happendix has become an intricate study, and an imp

"Have I made you angry?"

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The cell came to an end. Beyond it was another cell. This cells, as cells went, a more film of cells, fitted together to make a tiny tube, with the dulp and its crew of five clinging to the inner surface by minute attractions of electric charge. een the adjoining cells seemed ropy, with cables stretching from inside one cell to the other. They were not all intact and there u umps visible like the remains of a felled forest. It seemed to Morris He said again, "How far will we miniaturize, Arkady?" Tournally to the size of a small organic mo "But what would the chances be of spontaneous deminiaturization at that size?" Appreciable," said Dezhnev. "Mach more than it was when we were the size of a red corposele or even of a blood platelet. "Still not ensuch to worry about," said Boranova, "I assure you," "Exactly," said Dezhnev and raised his hand slightly with the first two fingers crossed so that Morris t see it and Boranova, farther back, could not. That American gostum had become universal and Morrison, knowing exactly what it meant, folt himself growi Durhary was looking study what has been be might have sensed Merrison's erimane or heard his outh erant. He mid: "Darty wary about it, young About it, is always wise to have but one worry at a time and defits now let us werry about suspension out of the blood weeel. -- Sorbia, new lowed one. "Yes, Arkady," she said. "Western the field in the page of the thin and when I move more for one ahead." 'I will do so, Arkady. Didn't your father once say: 'There is no point in trying to seach a thief to steal' "Yes, he did. Steal, then, little thief, neal." Merrison workened whether Dothow and Kallain were delbeausty being lathbausted in the face of the rooklifty of addan data as were of cherters has no? Or were they downter constraints? He down the former. Santy when as action minit essail? well be intermented as fields/or cherters as a structure of the intermentation of the face of the rooklifty of addan data as were of cherters has no? Or were they downter constraints? He down the former. Santy when as action minit essail? well be intermented as fields/or cherters as a structure of the rooklifty of addan data as were of cherters has no? Or were they downter constraints? He down the former. Santy when as action minit essail? well be intermented as fields/or cherters as a structure of the rooklifty of addan data as were of cherters has no? Or were they downter constraints? The ship's mar seemed to be hanging loosely and to remain several continenters (several picometers in real messare?) from the wall of the capillary. Morrison studied it closely and could see the semied ranks of promin and lipid molecules that made up that wall. He double. What are vedies instance this? Hen is our constraint to and frame which are real constant to an advantual is an advantu The ship was include along (an old work, throught Morrison sudded), azendating the metric system, but he'd never hand asyons cry 'continuenting along ') as though it wave somehow finding its way. Perhaps, between and Kallain's fickaring detectic fields, that was precisely what it was delega "We're approaching the junction, little Sophia," said Deathney in a cariously tight voice. "Make sure your hold is firm in front, while I move forward another mener or so." "I suspect from the apparance and electrical behavior," said Kallinin, "that we have a champ of arginines toward the junction. That represents a strong region of positive charge and I can handle that as smoothly as sour cream." But Bormova said sterrily, 'No overconfidence, Sophia. Keep a firm watch. If you miss and the ship tears loose, there will be much to do over "Yes, Natalya," said Sophia, "but with all respect, the warning is not really needed." Denhaev said, "Sophia, do exactly what I say. Keep only the prow of the ship attached to the wall, but strongly. Release everything else." "Done," said Sophia faintly. Merrisen from himself holding his breath. The rear of the ship had span areay from the wall, but it held in front. The Mondemann caught the denoted near and and packed the ship into a position at right angles to the current, while the capillary wall, where the ship still held, moves Merrison sold tightly: "Watch out We'll reall a section out of the well." "Quier, all" thandered Duchney. Then, in an ordinary voice, "Sophia, I shall increase the orgine path dowly. Get yourself in position to brack all remaining attraction. The ship is to be entirely assental -- but not until I say so." Sophia cast a quick look toward Boranova, who said in her quiet way, 'Do exactly as you're told, Sophia. For this, Arkady's word is absolute. Morrison imagined he falt the ship straining forward. The section of the capillary wall to which it was attached statched father and father. Sophia said segently, "Arkady, either the field will snap or the wall will." "Another moment, dear one, another moment. - Now." The wall snapped back and the ship bounded forward in a great loop that rocked Merrison gently backward. The forward end of the ship buried itself in the comment smift between the two cells of the capillary wall. hrobbing as the ship worked its way through the joint with what see creasing difficulty. There was nothing to see up ahead. The thickness of the capillary wall, very thin though it was in normal terms, was far thicker than the length of the ship The ship was now totally immersed in the joint and Dozhnev, beads of oweat on his forthead, turned his head and spoke to Boranova. "We're using up energy faster than we should." Boranova said, "Then stop the ship and let's consider." Deshney said. "If I do that, there is a chance that the natural elasticity of this material will not us out of the joint and back into the bloodername 'Slow the engines down, then. Choose a level that will be enough to keep us in place.' The throbbing came to an end. Derbury said. "The joint is exerting considerable message on the ship." "Enough to crush us, Arkady?" "Not now. But who can say for the future if the message continues Morrison barst out. "This is ridiculous. Didn't someone say we're the size of a small organic molecule? "We're the size of a elacose molecule," said lloranova, "which is made up of twenty-four atoms altoerther. "Thank you," said Morrison freezingly, "bet I know how many atoms there are in a glucose molecule. As it happens, small molecules drift through the capillary walls constantly by diffusion. Diffusion! That's the way the body works. Why aren't we diffusing through? Benneva aid, "Diffusion is a statistical proposition. There are tweery-four billion trillion glacous moleculars in the Mondername at any given time. They move account medicately and some manage to bit in each places and in such ways a to entrough a joint, or to move into the membrane of a capillary wall cell, into the cell, and out the other side. A very small percentage succeed at any given second, but that is enough to ensure proper tiss "That's no argument, Nambya," said Morrison imparisonly. "Why don't we simply do deliberantly what a real glucose molecule would do by chance? Especially now, when we're part way through the joint. Why are we stack in position?" Konev caid, "Its on Albert's cide. Diffusion probably ins) a passive leakage. There's some sort of interaction between the diffusing object and the barrier through which the diffusion takes place - except that no one knows what the interaction neight be exactly. Expectably here, where we face the Nord-Prain barrier "We're here at the barrier," said Dezhnev. "You're the brain expert. Can you look around and tell us how this diffusion works?" No, I carb. But placess is one molecule that gets through the blood-brain barrier unsity. It must because it is the brain's sole that for marge. The mustle is that while the ship is as small as a glacess molecule, it ine's a glacese molecule." "Are your active at aneithing. You' I said Borntoon. for is this a locater?" The genting at something. We had the ship become uncharged in order to hunge into the joint, but why leave it uncharged aren? Can it be given the charge pattern of a glucose molecule? If so, it will be a glucose molecule as far as Shapirar's body is concerned. I suggest you order it does, Natalya, Kallinin did not wait for the order. She said, "It is done, Natalya." (They each addressed Boraneya, Morrison noted. Each still maintained the faction of the other's nonexistence.) Derheev said, "And the joint's prevent decreases at once. It recognizes a friend, so it hows politidy and steps aside. My father's mother, long may I keep her memory, would have cried out, "Black magic," and at once would have hidde "Adady," said Bosness, "acrease the power of the engines and pass through before the joint notices that underneath the glacose pattern is something that is not glacose." Yes, Natalya," said Dephnes Morrison said. "This one is yours. Yuri. Your merestion was just right. In hindsight I see that I should have thought of that, too, but the fact is, I didn't." Konev said graffly, as though finding praise so anthing he couldn't handle, 'B was nothing. Since the brain Trees on glacose, we get down to glacose size. Eventually, we would have had to have a glacose presen, and as soon as you added the genetion why we wenn't diffusing when we should have been. I mailed we meeted the p Durhney said. "Members of the expedition, we are through the joint. We are out of the bloodernam. We are in the brain." In the brain, therefore Montions, but not in a brain cell. So far they had only ranged from the intercellular strace between the cells of the carellary wall, into the intercellular straces of the brain when the support and the form and interrulationships of the nerve cells, or neurons. Remove them and the cells would smuch into amorphous masses, realied together by envity and unable to maintain any smulble function. It was a jungle, made up of blick vity threads of collapue. (This was the nearly molveral asiant consecutor pressin that fulfible the functions of collabors in plane, loss charge, since it was pressin ander than carbohydrass, but for more finably.) Through the eye of utransistantization, does collapor thread, seally invisible without an electron microscope, looked like two transk, leasing this way and that is a world in which gravity was of little impertance There was fine and all filter threads. Meritions have the source of them night by dustin and that the collagain itself night come is solidy affittere variations. The could use the whole is a wider view, from a low-instantant standpoint, to work that, but was all and so the low-instantant standpoint, to work that have been able to detec onder and errorem. At this level, however, 1 was charted: One could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the provide to the could be view for a low or the low of the provide to the low of the l Morrison became areas that the this was moving very slowly. The four others were each stating around in worker. Either they had not expected this (Morrison hadr), for he had been too intercond in the electrical properties of the brain to think much concerning its microanatomy or. If they had, they had nevertheless failed to visualize it. Morrison said, "How do you expect to find your way to a neuron? Does anybody know?" Durhney was the first to anywer. "The ship can only move straight ahead, so we move straight ahead until we get to a cell." 'How do we move straight ahead through this jungle? If we can't steer the ship, how do we move around obstacles?' Dutherer ribbed its chia thought filly: "We day's more account, we push around. The ship will more pust one of those objects and there will be more friction on the contract side than on the other, so our pub bends, like a conter rounding the sun." He willed. "Constants do that when they see gravity to skin around a statilist or planet. We'll do it to skin around these things: Koney said moresely, "Those things are collagen fibers. Morrison cald, "Some of them are prenty thick. You won't always pass by. You'll bit one hand-on and stay them and if you can only move forward, what will you do? This ship was designed only for the bloodstream. We're halpless car of it with nothing to carry or along. Boraneya interposed. "Arkady, you have three microflusion engines and the jets, Eknow, are arranged at the near at the apicos of an equilateral triangle. Can you first only one of them?" "No. One contact controls all three "Yee, Addady, that is how it is now. But you designed the ship and you know the details of its controls. Is there anything you can do to modify them so that you can five them one at a time?" Durhney took a deep breath. Toveryone told me over and over again that I must cat corners, that I must save the budget, that I must do nothing to initiate the burnacents." "Aside from that Askedy is there anothing use can do?" "Lat me think. It means jury-digging. It means funding something to make evicthes out of, and extra wive, and who knows if it will work or how long it will work if it does, and if we work and up worse than we are. I see what you mean, though. If I can fire only one of the engines, it will not up an authalian "You'll be able to steer then, depending on which you fire." "Til try, Natalya." Morrison said angrily, "Why didn't you think of this when we were in the wrong capillary? It might have saved me the small trouble of nearly dying trying to turn the ship by hand." Durhney said, "If you hadn't so promptly suggested turning the ship by hand, we might have thought of it -- but it wouldn't have been a good idea." We was in the carrent of the Mondeman. The data is carrently emandied to take advances of it and its surface is devined to allow water to flow uset is vitibant urbalances, which makes it all the harder to turn out of the carrent. It would have taken much lense than write by had-- ad your much mere entery. The annotanes does not be advances of the carrent of the Mondeman. "Enough," said Boranova. "Get to work, Arkady." Durbney did so, rummarine through a tool chost, rumoving a cover plate and studying the control details within, maintaining through it all a kind of incoherent mattering Koney, his hands clasped behind his neck, said, without turning, "Albert, tell us about those sensations you receive." "Sepations" You wen selling us about them just before we got the news from the Gento that we were located in the correct capillary. For talking about the sensations you experienced when you wave trying to analyze the thought waves "Ah," said Morrison and caught Kaliinin's eye. Very slightly, she shook her head. Very tentatively, a warning finger crossed her line. Merrison said, "Nothing to tell. I had vague sensations I couldn't describe in any objective way. It could well have been my imagination. Certainly those whem I triad to tell about it wer "And you never published anything about them?" Never. I memly mentioned it in passing at conventions and that was bad enough. If Shapirov and you heard of it, it was through word of month only. If I had published, that would have come as near to scientific suicide as I would over want to be." "Too bad." Morrison looked bri rd Kaliinin. She had noddod very dightly, but said nothing. Clearly, she couldn't say anything without being overheard by the entire ship. Merrison locked annual cardiosity. Dichner was lost in liv week, cheding to himself. Known eared maight behade, losi in whatever ormanes thength to happend to have. Bernners, belind Kalitian, was enabling the scenes of her comparer cardidity and was making now. Merrison fid set by to mal thum - he could mad English spaked every, but he hadrit come to that pick of case with Russ Only Kallinin, to his left, was looking at him. Merrison pressed his lips together and then shifted his compaser into a word-processing mode. It did not have a Cystillic adjusct, but he spelled out the Ressian words in phonetic Roman lettering. WHAT IS WRONG She hesitated, probably not very much at home in Roman. en her own fingers flashed and the near Cyrillic on her screen read: DON'T TRUST HIM. SAY NOTHING. It was erased at once. Morrison wrote: WHY? Kalinin said: NOT EVIL, BUT PRORITY, CREDIT. WILL DO ANYTHING, ANYTHING, ANYTHING. The words were gone and she looked away firmly Morrison considered her thoughtfully. Was it only the vengefulness of a woman betrayed? It dish't matter, is any case, for the had no intention of talking about anything that he hadr's aboudy given avery, either is a paper or by world of month. He himself was not evil, but when priority and credit were concerned, he might not do anything, anything, but he would do a great data Still, there was nothing to be done at that moment. Or one thing, perhaps, which was completely aside from the point, but which was beginning, just beginning, to occupy his mind to the exclusion of other things. He turned to Boranova, who was still staring at her instrument and tapping her fingers softly against the arm of her seat in thoughtful conce "Natalya?" "Yes, Albert?" She did not look up. "Thate to introduce a note of univ realism, but" - his voice lowered to near-soundlessness -- "Im thinking of arigating." She looked up at him, a corner of her lips twitching very slightly, but avoiding the smile. She did not lower her voice. "Why think of it, Albert? Do it:

and tunnel. - All to study oscillations that might be produced by thought ... and might no

particular glacose molecule may remain in the blooderscam for a month without diffusing. Can we wait a month for a chance to do its work

Br - E, Domerov Okal (Olering: Pince (Olering Law), Meine Panet, Olering (OleV), All Coloring (Olexies) (E. d. D. D. 1994), 1994 (OleV), 1994

Morrison had frequently found that, soo. He whispered, "It's all very well for you. You're there in the back seat alone." And he nodded slightly in the direction of Sophia.

Branneys frowned, almost as though the wore the scalars' in the cases. "That is quite stilly and, in any case, you are not. Thave already taken case of such a need in myself." Then, with a faint shrap, "Tension tends to increase arguncy, Thave frequently is

"50" Bennova shock her hand. "Sneety you don't wish nes to importe a curation for you? Shall I place my hand over her eyes." (Kallinin looked in their direction in surprises) "She will ignore you, Tin sure, out of decency and out of a feeling that in short onlier the will wish you to ign Merrisen was keenly embarmesed, for Kalinin was now looking at him with obvious understanding. She said, "Come, Albert, I held you taked in my lap. What room need one make for modesty now?" Morrison smilled weakly and made a little thank-you gesture He tried to remember how to manage the wave ii do his sur, but once he remembered, he found that it did ones with a small but definite click. (Those instanter Seviest Backward alwave is small wave, it minite casily have been desired to one neiseless). Morrison fold the current of air at the moment the water lid owneed and it this uncomberably cold availent his bare skin. He wided with a tremendous relief when he was done, then he managed to close the wal alone the crosch and on them, curring. He malized that he must have been holding his branch. "Here," wild Berguery, Ho stared, for a moment, at what the was holding, then recognized it as a small scaled towel. He tere open the scal, found the towel within moiseneed and scenned and rathbed like hands with it. (The Soviety were learning small elegances, obviously – or decadences, depending s And then Durhney's theoaty voice sconded loadly, very loadly, in Morrison's car after all the whispering he had been engaged in. "That's done now." "What's done?" asked Morrison angrily, automatically assuming the reference was to his bodily functions. "The individual firing of the motors," said Derbares, making a there-you-are gesture with both hands in the directions of the ship's controls. "I can fire any one, or two, or all three, if I with. Absolutely contain -- I think "Which is it. Arkady?" said Boranova waspishly. "Is it only certain or is it a matter of opinion?" "Both," said Dazhnev. "It is my opinion that I am absolutely certain. The trouble is that my opinion isn't always right. My father used to say --" "I think we ought to try it out," said Keney, catting off Deshney's father, perhans in the full realization he was doing so. "Of course," said Dothnes. "That goes without saying, but as my father used to say' -- he mixed his voice as though distermined not to be again subverted -- "the same thing about anything that goes without saying is that someone is board to say's. -- And you might as well know --" He paused momentarily and Boraneva said, "What might we as well know?" "Several things, Natasha," and Durhney. "In the first place, steering will take a lot of energy. Twe done my best, but the ship is not designed for this. For another -- well, I car't communicate with the Greto now." "Carlt communicate?" said Kaliinin, her voice rising to a near squeak in what was either surprise or indignation. Boranova's voice marked her as definitely indignant. "What do you mean, we can't communicate?" Tense, Namba, Leat view op te norm synthety view view, car The bote register in the work car) and active set of ending and car instantiation days or of ending state. Sensitive fails do not be donated and for see they conditioned to be the sensitive fails and completely be donated and for sensitive fails. u was silence as the ship began to move. The surroundings were utterly diffe 1 nov. In the blockmann, there had been a hearing melity of objects -- some caveling aband of the dup, some dowly drifting bahind, depending on eddes and stramilining. Morrison supposed. Then was the feeling of movement, if only because the markings on the walls -- Intry plaques in the arterises, tilling in the capitaries, slipped stuady backwaid. Here, in insurcellular space, however, there was stasic. No motion. No fauling of lifs. The tangle of collagon fibers seemed a forest primeval, built up of tanks only, without reduct, without seemed, without motion Once the thip pushed forward through the viscous intercellular fluid, however, everything began to move backward. The ship diped stread and through a V-shaped meeting of fibers and, as they passed through, Montion had the plain improviso of a losse spinal making its way spond along each collagon fiber, the spinal being more marked on the thinner of the two. Up ahead was a thicker fiber still, a monarch of the collapse inner "You'll have to turn, Arkady," said Koney. "Now's the time to test it." "All right, but I'll have to lean over. I don't have the controls nearly at my fingertips. The visation." He learned forward, groping at a level about that of his calves. "I do not relish the thought of having to do this constantly. It is hand on a man of portly habit." "You mean a man who is fat," said Koney ill-naturedly. "You have let yourself go flabby, Arkady. You should lose weight." Denhaev straightened up. "Very well. I will stop right new, go home, and begin to lose weight. Is this a time, Yuri, to lecture me?" "It is not a time for you to get emotional either. Arkady," said Boranova, "Steer?" Durhner best over, suppressing a grant. Slowly, the ship sumed rightward is a gentle arc; or, to judge more lisenally by apparators, the thick collagon fiber defined leftward as it approached -- as did everything else. "You will hit it." said Koney. "Turn more sharely." "It won't turn more sharply," said Durhney. "Each motor is only so far off-center and I can't change that." "Well, then, we will hit it," said Keney, an edge of anxiety in his voice. "Then let us hit," said Boranova angrily. "Yuri, do not go into panic over inconsequentials. The ship is tough plastic; that fiber is undoubtedly rubbery. And as she spoke, the prow of the ship began to pass the collagen fiber, with listle mome to space. Watching through the port side of the ship, it was clear that the broadening beam of the ship seat, it harrened. There was no so sound, only a very soft hiss could be detected. Not only was the fiber rubbery, as Boranova had said, so that it c The ship continued to move and turned leftward in the direction of the fiber. Durhney said, "I shut off the motor as soon as I saw we were about to ma tact. This leftward turn we're going through now is a friction turn. "Yes," said Koney. "but what if you had wanted to turn in the other direction?" Then I would have used the meters Or, considently surfar is ore progress, I would have made a true toward a graze with the fiber to the right. That fiber would have used to ingirerant. The main thing, in any case, is to use the memory sa listic as possible and the fiber to assess with the fiber to reacy to completely, In the second place, the registrant of energy increases the chances of operative structures and the fiber to assess the second place. "Mostl' and Mantana Discoursed in Research 75, the second "It's not an important effect," said Boraneva, "but it's true. The chances go up a bit. I should say that conservation is the more important of the two reasons for saving energy. But Montion could not repress his anger. "Don't you see how tridiculous - no, criminal - this whole simution is? We're in a ship that simply isn't up to the task and even Boranova shook her head. "Albert, please. You know we have no choice." "Boilds," taid Dothore, graning, "I we manage to do the job in this sensitable dap, think low much more resuntable that will make us. We will be haves. Anthenic hences. We will sumly get the Other of Lanin - each one of us h will be a foregone conclusion. And if we fail, it is conferring to think that we will be able to explain it as the dup's fail "Yes. Soviet herees, win or lose, all of you," said Morrison. "And what will I be?" Boranova said, "Remember, Albert, you will not be neglected if we succeed. The Order of Lenin has been given to foreigners on a r ations, including many Americans. Even if you should not want the honor for some reason, the success of your theories will be esta "Write in to resultion to count our chickens," said Morrison, "I shall refrain from countrasian my Nabel accentuace sparch for just a while, there we " "Actually," said Kaliinin, "I wonder if we're in a position to reach a neuron." "What's the difficulty?" asked Dezhney. "We can move and steer and we're outside the capillary and in the busin. Just out there is a neuron, any number of them, billions of them "Just out where?" Kaliinin asked. "I don't see any neurons. Just collagen fibers." Dezhnev said, "How much of this intescellular fluid do you think there is? "A microscopic thickness," said Kalinin, "if we were normal in size. However, we're the size of a glacose molecule and, relative to carselves, there may be a kilometer's distance or more to the nearest nearon."

"Well, then," said Dezhnev, "we'll move our ship a kilometer. It may take a little time but it can be done." "Yoe, if we could move in a straight line, has we're in the middle of a dense insuit. We have to turn and twice around this fiber and that and, in the end, we may travel fibe kideneurs by our own measurement and find envelves back at our startine point. We're in the middle of a dense insuit. We have to turn a nearest and the we're in the middle of a dense insuit.

"Yuri has a map," said Dezhnev, sounding a little nonplussed. "Yuri's cerebs

Known, frownian, shock his head. "We conference how me the circulatory network of the basis and the cell network, but Last extrand it to be roise where it will indicate our rootion in the intercellular fluid between cells. We don't know that set of fine detail and we can't set our of combrovrable any more fluor.

Morrison looked through the wall of the ship. In all directions, the collagen fibers could be made out, overlapping and blocking them in. In no direction could the eye see through them very far and in no direction was there any sign of anything bet fiber open fiber. No nerve celle! No neurons!

The wall that says "Welcome, stranger" has never been built. -- Dezhnev Senior

Boranova's nostrils flared slightly and her dark evolvency banched together, but her voice remained calm-

Adrady, the usid, "You will reaved forward in as versight a line as possible. Curve to a minimum consent and, if you can, curve left and right alternantly. And, eince we're in a three-dimensional situation, up and down alternantly

"It would get confusing, Natasha," said Dathney. "Of coarse it will, but pathaps it won't get completely confusing. We may not be able to mavel relier-straight, but maybe we won't go in circles, spirale, or beliese either. And somer or hare we should mach a cell."

"Perhaps," said Dezhney, "if you deminiaturize the ship a little bit --"

"No," said Boranovo

"Wait, Natasha. Think about it. If we deministrative a bit, then there will be less space to travel. We grow larger, the space between blood vessel and neuron grows smaller." He made eloquent gentures with his hands. "You underemad?" Tunderstand. But the larger we get, Ackady, the most difficult is will be to pass between the fibers. The nearons of the brain are well-protected. The brain is the only organ to be completely encaued in bone and the nearons themselves, which are the most dar in the body, are well-packed with inte terial. Look for yourself. If s only if we're down to the size of a glucose molecule that we can make our way through and around the collagen without, perhaps, doing drawic dame

d slightly under the force of the collision, then rebounded, pushing the ship a triffe away -- but the slimy intercellular fi

At this polet, Know committed the unusual act of turning in his star, looking upward as he turned to his left to that his glance passed over Kallinin before meeting Boranova's eyes. He said, 'I don't think we have to travel onward completely blad -- completely at andom

"How otherwise, Yuri?" asked Boranova. "Surely the neurons give themselves away. Each has nerv

matring its length metadically and at very short intervals. That might be Morrison frowned. "The neurons are insulated."

"The axons are - not the cell bodies

"But it is the axons where the nerve impulse is strongest."

o, it is the synapses where the nerve impulse may be strongest and they are not insuland, either. The synpasse ought to be sparking all the time and you ought to be able to detect it." Morrison said. "We couldn't in the cavillary."

"We were on the wrong side of the capillary wall at the time. -- Look, Albert, why are you arguing the manter? I'm adding you to try to detect brain waves. That's why you're here, in't it?

"I was kidnapped," said Morrison violently, "That's why I'm here,"

Bonneya laned forward. "Albert, whatever the mason, you're here and Yuri's suggestion is a masonable one. -- And, Yuri, must you always be confromational?"

Morrison found himself shaking with anser and for a moment he wasn't sure why. Koney's succession was indeed massnable.

Then it occurred to him that he was being asked to put his denoises to be too under conditions which would allow him no occup. He was on the very bosine of a basic of that was magnified with respect to instead it on monitories propertiess. He might be added not to make his no make his not inside, scalady inside, such a cit. Add If the dd--and If he hadner of agreement and encouse could be hide from the fact that his vort was wrange and had being . . . He was angry, sarely, at being thrust into this uncomfortable corner by circumstance and not at Konev particularly

He was aware of Boranova waiting for him to say something and of Koney maintaining his incandescent stars.

Morrison said, "If I detect signals, I will detect them from all sides. Except for the capillary we have just left, we're

"But some are closer than others," said Koney, "and one or two would be closest of all. Carly you detect the direction from which the signals will be the strongest? We can home in on that signal." "My receiving device isn't equipped to determine directional signals."

"All Then Americans, too, make use of devices that are ensimed for specific purposes and do not prevare for emergency needs. It is not merely the immant Soviety who --" "Yuri!" said Boranova sternly.

Koney evailswed. 'I suppose you'li sill me I'm conferentional again. In that case, Natalya, you tell him to think of a way of devising something that will sell him the direction from which the strongest signals are coming. "Please, Albert, make the attempt," said Bonnova. "If you fail, we shall just have to blander our way through this collagen jungle and hope we come upon something before too long."

"We're blandering onward even as we speak," pet in Dezhnev almost cheerfully, "but I still see nothing

Still angry, Morrison activated his computer and per it into the brain wave reception mode. The screen flickered, but it was only noise -- though the noise was more preminent than it had been within the capillary

if now, he had always used leads that involved micropositioning inside a nerve. Where was he to put the leads now? He had no nerve to put them into -- or, rather, he was alwady inside the brain, which made the whole ioning anomalous. Perhaps, though, if he let the leads (made as stiff as possible) rise in the air and spend apart like a pair of annonae, they might play the part. At their pressure size, the spend would be size and could scatcely be a

He doubled and redoubled the leads and they used up in long loops, looking very mark like the insect amments that had firet given them their sames. He then focused and tharpened reception as well as he could add the flickering on the scenes suddenly breke into deep narrow waves - bet only for a moment. Involutionity, be let out a cry

"What happened?" said Bozanova, startley

"I received something. Just a flash. But it's gone."

"Try again."

Merrison looked up. "Linen. All of you. Quiet. Working this thing is difficult and I manage best when I can concentrate entirely. Understood? No noise. Nothing."

"What was it you received?" said Koney softly.

"Like a flash. You received something like a flash. May we know what it was?" "No. I don't know what I received. I w

soked behind him to the left. "Natalya, I'm in no position to give orders, but you are. I am not to be disturbed by anyone, particularly by Yuri. "We will all be exist," said Boranova, "Proceed, Albert, -- Yuri, not one word," Merriers loaded durply to holeft, for them had been a off teach on his hand. Kallnin was looking at him kennly and flow van a small entile on hor face. She membed versh is an exagented failour and ho managed to catch the Resister. "Pop to attention to him. Show him! Show him! Her eyes seemed to ginner. Moreison could not help but smile warmly in response. She might be motivated entirely by a desire for vengence against the man who had abandoned her, but he enjoyed the look of assurance and high that was present in her eyes (How long ago had it been since a woman had looked at him with pride and with trust in his abilities? How many years ago had it been since Brunda had lost here?)

A spasm of self-pity shook him and he had to wait for a moment.

Back to the device. He tried to shart out the world, shart out his condition, think only of his comparer, only of the tary fluctuations in the electromagnetic field produced by the interchange of sodium and po

The screen flashed again, smalled, and resolved into a pattern of low pasks and valleys. Carefully, barely during to teach the keys, Micrison flow in an expansion directive. The peaks and valleys ending off the screen. On the single pask and valley left remaining, there was a fazzy smaller weight

It's recording the waves, he thought, afraid to say so, afraid even to think it with any intensity, lest the slightest physical or mental effect suffice to black it out. The minor wirele -- the skertic waves, as he called them -- went out of focus and back in, never oute sharpenine.

Morrison wash surprised. He might be detecting the fields of a number of cells that didth quite deplicate each other. There was also the isonizing effect of the plant: wall of the objec. There was the seemal dusking of Brownian motion. These might even be the interfering charge of non-grouping conside the a

The wonder was that he had notion waves at all.

Storely be made hand connect with the annumae - tild his fingere up and down, fires one hand, then the obse; then both in union, then both in seposite directions. Then he here the annumae gardy, this way and that. There were sharpening and fazzing of the skeptic waves, but he ddsh kazwe, for cornia, exactly what he was doing that resulted in the sharpening

And then, at a certain point, the tiny waves sharpened acausty. A little to one direction and another they fuzzed, but in one particular direction they were sharp. He tried to keep his hands from trembling

"Arkady," he said.

"Curve left and a little upward. I don't want to talk too mach."

'Til have to curve around the fibers.'

'Curve slowly. Too fast and I'll lose the focus.'

Moreiven fought to keep his eyes from fickering leftward toward Kulisin. Just one look at her face and one inevitable thought of her protinens would be distraction enough to face on the screen. Even the thought of distraction was itself distracting enough for the thought wave to ficker. Derhner was curving the ship in the genile are that was all that the offset morest would manage and slowly Merrison shifted the asternate to suit. Occasionally he momend a brief whispend direction: "Up and right," "Down," "A little left."

Finally he gasped, "Straight ahead."

It should get easier, he thought, as they get closer, but he couldn't relax satell a neuron was actually in sight. And, through the obscuring collagon thicket, that was not likely to be satell they were nearly on top of it

Concerning on only one subject was as tring as classiching a structure and larsing in classiching a structure and larsing a st

The - without summing and overshelmingly - acother hought invaded bic mind. It was a sharp mental picture of Sophia Kalliain, tooking younger, prettier, and happier than she had ever somed to him in the short time he had known her. And with that He had not been consciously aware of any of these feelings, but who knew what unconscious thoughts and ensoines might be hidden them in his own brain cells? Kallinin? Did he fiel that way about her? So quickly? Or was it the abnormal tensions of this fazzantic voyage into the brain that had brought about fazzantic responses?

It was only then that he noticed that the samen had fuzzed out complexity. He was about to shout a warning to Durhner to stop the motors while he concentrated and tried to recepture the waves when Durhner's voice bound out.

"There is a Albert You mided as to the cell like a bloodboard. Communications?"

"Also," said Boranova, gazing at Konev's lowering con ations to Yuri for coming up with the idea and persuading Albert to make the effort." Koney's face relaxed and Dethney said, "But now, how do we get inide?

Morrison stand at the visus alored with intervest. What he core was a vair religiod wall standards op and down, right and left, as far as the ship's light make it possible to use. The ridges ware themselves broken up into domes on that, on closer impection, the wall seemed to be a checkenbaad with each square bulging contrast. There were regred on een the bulges, like thick, short, and branching ropes that gave the wall an appearance of being tamered

Merrison, with once effort, allowed for his own minimutation and grapped the fact that the belges were the onde of molecules (of phospholipids, he assumed) that made up the cell membrane. He realized with some dismay just what it means for the dup to be the due of a glacous molecule. The cell was an enerosus object, by present allo means, it must be many lidemeter across

Koney had been staring at the cell membrane also, but emerged from his thoughtful contemplation sconer than Morrison did. "I'm not sure," said Koney, "that this is a brain cell -- or, at least, a neuron,"

"What else can it be?" said Duzhney. "We're in the brain and that's a ce

Bunanova said, "We can't be guided simply by chance, Yari. Can you tell in some definitive way whether this is glia or a neuron without involving statistic?"

You just by looking at it, no. From this size, all I see is a small section of a cell membrane and in such a case one cell looki like another. We'll have to become larerer and set a more manumark view. I resume we can become larerer now. Natabra Ahrr all, wire through what you called the collasen instells.

"We can deministrate, if necessary," said Bonneya, "but increasing size is more tedious and risky than decreasing it. An increase means the generation of host and must be done slowly. Is there any aberrarive?" Koney said tathy. "We might try Albert's instances again. Albert, can you tell as if the skeretic waves you can detect are comine from straight ahead or from a slightly different direction."

Morrison bestand. Before his instrument had fuzzed out at a time inst before the cell had been sided, there had been the Kalinia vision and he dda's ware it back. It was too embarrawine, too unsurine. Surviv, if his mind hid and wareneesed emotions, it was because they were better hidden and wareneesed

He said uncertainly, "I'm not sure --"

"Try it." said Koney and all four Soviets were now looking at Morrison earnestly.

With an inward shrag. Morrison put his computer into action. After some consideration, he said, "I get the waves, Yuri, but not as strongly as I did on the way here."

"Do they get stronger in another direction?"

'Slightly, from a more upward direction, but I must warn you again that the directional abilities of my device are very primitive.'

The line the start processing and out - Harris is what it is users to not have have proved, Nadry, Contrady have we able to detect a neuron directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new masks the search and we get the thought severe ment directly above the top of a glia that by before it. When he care the glia, Ackady materially essend for it and in balk new mark the search and we get the top of a glia that by before it and top of a glia that by before it and top of a glia that by balk new material top of a glia that by balk new material top of a glia that by bal "In that case," said Boranova, "we must go over the glia to the neuron."

"And in that case," said Konev, "I say again that we must dominiaturize. At our present glacose size, the distance we must pass in moving over the glia may well Kullinin said in an abstracted voice, as though what she had to say hore no relationship to what had just been said, "We will have to be our present size to get into the neuron, Natalya."

And, after a short passe, as though disregaring himself from the possibility of directly answering the remark, Konev said, "Of course. Once we reach the neuron, we madjust our size to whatever Berness sighed and assessed leat in her care theash

Konev said with unaccestomed gentleness, "Natalya, we'll have to change size eventually. We can't stay glacese size forever

"I hate to deminiaturize oftener than I must," said Boranova.

"But we must in this case, Natalya. We cannot spend hours cruising along a cell membrane. And deminiaturizing tendold at this stage involved a very low absolute energy change."

Morrison said, "Is it that starting the dominiate zing process might initiate an uncontrolled and ex

Bozarova said, "Then's nothing wrong with your inmition, Aftert. Without knowing anything about miniatarization theory, you manage to graup the point. Once started, it is safers to allow the deminiaturization to continue. Stopping it involve

to does remaining at glacose size for hours longer than we need," said Koney. "Trac," said Boranova, nodding her head,

Deshney said, "Shall we put it to a ve

At this, Bergarya's head wareed up and her dark eves womed to flash. Her harvy taws wit firmly and the said. "No. Addark: It is up supported billion to make the decision and I will increase the size of the shin." Then, abandonies the air of makers: the said. "Of course you can with me well." Dezhnev said, "And why not? It would be the same as wishing all of ourselves well."

Beamers here over her controls and Morrison error sack/hr intel of trains to watch. He could(h) actually see what the was doine if he did see is, and there was the mandates fact that his neck was beeinging to acte with the effort to know h transl. He looked forward and forest Know voering at himse

"About the skeptic wave detection," said Koney. "What about the skeptic wave detection?" said Morrise

"When we were makine our way to this cell through the collagon innels ----

"Yes yes, what about it?

"Did you est any -- images?" Morrison remembered that tearing vision of Sophia Kalijain. Nothing like is existed in his mind new. Even when he thought of it as it had the

He temporized. "Why should I have sensed any images?"

'Because you did on occasion when you analyzed skeptic waves at normal-size intensitie

"You're assuming that analysis during miniaturization would produce greater intensities or possess greater image-producing power

'It's a reasonable assumption. But did you or didn't you? The question doesn't involve theorizing. Its asking about an observation. Did you get any images? And Morrison sighed inwardly and said, "No."

Koney continued his sidewise peering (under which Morrison fult himself grow a little restless and rather more than a little irate), then said softly, "I did." ou did?" Monison's eyes widened in honest surprise. Then, more cautionsly, "What did you sense?"

"Nor much, but I thought you might have some it more clearly. You were wright helding and manipulating war date to read it is muchable more admost to your brain then mine

'Just what was it you got? Can you can describe it at all?'

"A kind of flicker that moved into and out of awareness. It weened to me that I saw three human figures, one larger than the others."

"And what did you make of that?" "Well, Shapitory had a daughter whom he adored and the had two children whom he also adored. I imagine that in his come he may have been thinking of them, or numerbering them, or being under the delusion that he was seeing them. Who knows what goes

"Do you know his daughter and his grandchildren? Did you recognize them?" Twas using them, as it were, through manshacent glass in the resilight. It was all I could do to sense three figures." He sounded disappointed. Thad hoped you would use it more

Morrison, thinking hard, said. 'I neither saw, nor sensed, anything like that."

Konev said, "Of course, things should be sharper once we are inside a neuron. It is not images we must sense, in any case. We want to hear words:

"Typ payor heard words," said Morrison, shaking his head.

"Of coarse not," said Koney, "since you worked with animals who don't use words." "True," said Morrison. "Just the same, I once managed to run some tests on a human being, though I never reported it. I surged no words then or images either."

Koney shrugged it off. Morrison call, "You know, under the circumstances, it might be natural for Shapirov's mind to be full of family -- if we accept your interpretation of what you thought you sensed. What would the chances be that he would be thinking of some countic entension of mini

"He was a physicist. Even his family came second to that. If we can sume words out of these skartic waves, they'll be words dealine with physics."

while, while keeping one hand on the controls. He suffied at it and said, "My father used to say: There is no drink like pure water, previded one realizes that it is alcohol that is the purifying agent.

"You think that, do you?" "I am positive."

The two full quiet and for a few minutes there was no sound in the ship. Then Boranova said, 'Tve deminiaturized the ship to protein size and I have brought the process to a halt.'

A moment passed and then Derbney, with an unaccustomed tichness to his throaty voice, said. "Are thines all right, Natasha?"

all find a cup in the little

Derbney looked at his can dieta

fir i El Dunment

Bozarova said, "The more fact that you can ask the question, Adady, is an answer in the positive. Deminiaturization has stopped without incident." On smilled but there was a definite trace of nonmiration eligening at her baird

She distributed water to all five, saying matter-of-factly, "There's no shortage of water, so if you want seconds, say so."

"We must all go through privations now and then," said Dezhnev, who then downed his water and made a face.

The surface of the glial cill still structured out as far as the say could use into the dimensional process beyond the reach of the ship's light, but it had changed in character. The domes and ridges had faded out into a fine sources. The spece that had extended from between the domes that become threads nearly impossible to see as the ship special along the surface.

Metricen's amonion was, for the most part, on his computer, as he watched to see that the skeptic waves dal not decline in intensity, but, periodically, he could not help but drift away from that and gate at the parorana conside

Occasionally, there would emerge from the surface of the cell the typical dendritic processes of a nerve cell - even one that was merely a subsidiary gliat cell. They branched and sub-branched like a tree in winner, growing out of the cell in

Even as the area and larger circs of the ship, the deduktion were larger them they or merged from the coll. They were like me tranks, which, however, narrowal registry and were dadely fluctive. Larger the rightly of the cataling fibers, they receyed in the deduce sort up by the daily regresses through the estace-thilder field. They recered, indeed, as the ship regresses through the estace-thilder field.

Ciliages there were fewer in the immations asylphotocol of the ciliage raise of the ciliage varies much thinser and more trapping. On sease casion, Durbare either did not see one looming directly about of the bips of did not care that it way. The thip brought it is a way that brought it just omick Meetines' war. Bit fincked at the signary and it was the collages filter that been did not see one looming directly about of the bips of did not care that it way. med and his eyes followed the broken fiber for the second or so that it remained in view before floating awa

"Yes, Ackads," said Boranova, "I are only our lather partial his water frequently, but here on the ship, with your hands on the controls, you will have your water annualified."

Benners must have sens k, too, and washed Moreleon's reaction, for due said, "There's no reason for concern. There are stillions of those fifters scattered through the brain, so that one more or less doesn't matter. Boidee, they had - even in a brain as halfy damaged as poor Slagiory's "I suppose so," said Morrison, "yet I can't help but think we are crashing without any right through an infinitely delicate mechanism not meant for technological invasion."

n been, it now roused to resonse. Whatever it was in his mind, it seemed to have been mached only under the intense stimulation of concentrated skettic wave: and whatever it was, he was not origin to describe it to Koney - or to aveous else. for that

'I appreciate your feeling," said Boranova, "but handly anything in the world see vith any apparent pre-vision of human interference. Blumanity does a great deal of wrong to Earth and to life, some of it wittingly. - Incidentally, Fm thinsy. Are you? "Definitely," said Morrison.

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The chocolate was gone when Konev said to Morrison in a low voice. 'Have you sensed anything while we've been skimming past the glial cell?'

Konev frowned, passed a moment, then said in a clearly hostile manner, "Why are you so opposed to the possibility of getting a messag

Konev said, "What, then, if you succeed in heating something viral, something that bears on our project? Will you perhaps keep it to yourself?

They had been speaking in whispers, heads together, but Boranova's ears picked up the key word. "Politics, gentlement?" she asked frostily.

"You wanted to be aware of something, I suppose, and something promptly obliged by fitning through your mind in response. You get the same effect in dreams."

They wouldn't. No one else was concentrating on your machine. Perhaps no one else in the ship had a brain sufficiently like yours to sense on your wavelength, so to speak:

Boranova said, "I suppose, strictly speaking, it's hatching, but we can do without. Still --"Still what?" asked Dezhnev. "A good plate of piping hot borscht with sour cream?" ranova said, "What I have smuggled in against regulations are bits of chocolate -- high-calorie, zero-fiber Kallinin, who had disposed of her small damp paper towel and was shaking her hands to dry them, said, 'It will rot our teeth. ot immediately," said Boranova, "and you can risse your month with a little water to reduce the sugar residue. Who wants one?"

"It crossed my mind when I was looking at your instrument and concentration."

"You're just guessing. Besides, what does the phrase mean?" "Green fields? Sharirov had a house out in the country. He would remember the green fields. 'He might have merely supplied the image. You would supply the words.'

'Of course III share whatever I sense. I have been doing so just now."

"The Committee may disaptroys, as Albert himself tointed out," said Boranova, "Lat it. I don't concern myself with it," said Koney "Ill prove I love you. Yuri," internoved Durhney with a chuckle. "I won't enote you."

Boranova said, "Well, let us await events." The tension died down. Morrison remained buyy with his own floughts, watching his machine only in abst

Boranova said, "It well may be."

"Good" said Deshney. "New what?"

"Through the tallps," said Morrison, looking at Koney "What?" said Koney, looking both annoyed and puzzled.

"What nonsense are you speaking?" snapped Koney.

"You're talking emptily," said Koney, "Leave me alone," But he looked shaken, Morrison thought. He had take

Kallinin said, "We've attached ourselves to a glucose receptor." "Good." said Deshney. "I've turned off the motor. New what do we do?" "Nothing," said Kaliinin. "We let the cell do its work and we wait.

Morrison tried not to think about it.

"I assure you it does," said Kaliinin. And as though to give notice that that w

Kone said "The serface is exthering as in "

"Now what?" said Dephney.

"And we?" persisted Derbary.

Even as she stoke, the pertide receptor fell away, uncoiling, 'Is that a good idea, having it metabolize us?' asked Dezhney

Dezhnev nodded. "It looks like its doing this." He held up his thick and callesed hand, cupping it.

So was Morrison. They wanted to be inside the cell and this was the way it was done.

"Please notice," said Kaliinin, "that no enzyme molecule has attached itself to us." "Why is that?" asked Morrison, who had, indeed, noticed that,

Berness leand forward "Work are melecule as minic he liable to metabolic change Soubio?"

"How can you tell, Yuri? -- I didn't sense any such thing. Did anyone else sense it, do you suppose?"

"No." said Morrison. (He hadn't.) "Have you?" 'I thought I did. The phrase 'green fields' crossed my mind Morrison could not prevent himself from saying "Hums" and for a while remained lost in thought.

"Well?" said Koney.

"No. This was mal."

It might have been the taste of the water that caused Kalitain to fumble between her legs. It took a moment for Monison to malize that it was her turn to trainate and he turned his head toward the window and waited to see if another collagen fiber might go flying

Four hands were us, Kalinia's not the last. Morrison welcomed his elady. He was found of chocolate in any case and socked at it to make it last losses. The taste remained him noisenantly of his boyhood in the conductive

Merrison allowed himself to be equally hostile. "Because Fve been burned by reporting such sense perceptions. Fve been ridicaled long enough and I have become castions. An image of a woman and two children do

Merrison nodded. "Twe been thinking precisely that and would have mentioned it if it looked as though you were going to tell me that it was against government policy to be honest with me."

indeed so, the ship seemed to twist in mid-fluid, judging by the sudden shift in view through the walls.

"Searching's homospine" with Morrison to be full the shirty own motion threads the time drue of inertia that remained to them at their thereads and fully many

"Exactly," said Koney. "It will invaginate, make a deeper and deeper cap, narrowing the neck and finally closing it, and we will be inside the cell." He seemed quite calm about it

"We're in a vesicle inside the cell," said Kaliinin. "It will grow more acid and the neeptor will then detach itself from us. It and all the meeptors will then mum to the cell membrane.

Since we are recognized by our electric field as a glucose molecule, " said Kalinin, "the cell will try to membolize us -- break us up into smaller fragments and extract energy from us."

"But if the enzyme molecule releases us, worth another enzyme molecule of the same type attach itself to us and try again - and so on indefinitely."

Kalinin looked thoughtfully at the cell surface below. She said, "Nanlya, we'll have to minimarize to glucose size again. Arkady, get us in among the dendrites so that we can get down to the surface of the cell body."

Morrison watched the surface also. The deaddites were much more elderates than those on the glin. The searces one branched and branched again smill it looked like a fuzzy frond variables beyond the reach of abiy light. Others, further areay, were fuzzier and smaller

They were now movine suzziled to the surface of the neuron. The memory movine entry and Merrison realized that he couldn't tell which were entry and which had attached themselves to some of the molecules movine through the estimation of the test of the surface of the neuron.

Under ordinary conditions, such a resist would have thrown every person on the dep hand against the wall or the seat arm. Mass and ineria, however, were at virtually zero and there was only a fairt evoying, hardly deingeshable from that which they associated with Brownian motion.

Merrison looked ou again. The receptor virtually blanked out vision on the side of the ship along which it lay. If he looked beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, however, he could see a farther erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, how erret erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, here erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, here erreth of the neuron's surface, seemingly without end, for it vanished beyond the receptor, here erreth of the neuron's surface, seemingly without erreth of the neuron's surface,

Then, even as he watched, it seemed to him that the receptore were moving toward him. He could see them now in greater members and could also see that those members were still increasing. The receptore and the pressin molecules to which they were attached see

The receptors continued coming together, alongoide such one of them some molecule - some mult molecule - and in among them the foigning molecule of the ship. The cull's surface, like Distance's capped hand, closed upon them entirely and draw them in

"It wont," said Morrison. "We'll be attached to an appropriate enzyme melecule which will find that we don't react as expected. We won't take on a phosphate group, so it will be helplow and will probably release us. We're not really a gle

It was all happening at once and, Morrison knew, this was only the anaerobic portion of the process (in which no molecular oxygen was used.) It would end by breaking up the glacose molecule, with its six carbon atoms, into two three-carbon fingments. A fifth energy would be produced in this fashion and the dragments would be shaund in the minchendia for the completion of the process with the use of oxygor; a process in which the universal energy-stranding models, advession supportant (or ATP, for dorr) would be invo

"Now that you mention it," and Morrison, mbbing bis chin and absently noticing the briefles grown since bis moming thave, "it may be that the first molecules won't let us go, I suppose, if we won't do the expected."

Hocause of a elight change in electric charge pattern. We had to mimic a glucose molecule to get into the cell, but once in, we don't have to be one anymost. In fact, we must mimic something else:

Kullisis and features in concern "Likely location which measures are fee shown her a sense must of them must be "Birm sense than alongly" Articly ... sure deally "If safe caught Likely near to use food ... or to use them location which are sense of them alongly and the sense of the sense of

Dothers had the ship apprach the surface of the cell body, dowly silbering you the nearest dendine (he was learning to handle the unbalance of the individual engines with a certain flasses, Morrison floaght) - and, as he did so, it seemed to Morrison that the surface of the nearest was

"No problem, lattle Sophie," and Danhaev. "It'l start off the motore, the ship otops at once. It can't production gatar atoms that summed us and analy. Too viscous, So I just give it a truth of margy, enough to shoulder our way pass the molecules of water, and well tippes across the recepture."

And then Durhney said. "Then's another cell just ahead - a kilometer or two. It looks as though it might be larger than the one we've been massime. Is that a neuron. Yuri?" Koney, who seemed to have been in a brown study of his own, snapped to attention. "Albert, what does your machine say? Is that a neuron" Morrison was already handline his device. "It must be," he said. "Two never seen the skettic waves this share."

The downward change was considerably more rapid than the upward change. Absorbing energy was simple, while the energy release of dominia

'B's a phrase that worst through my head. There's an old show tune called 'Tip Toe Through the Todips With Me,' In English, the words are --'

Boranova said, "I don't mean to question your ability, Sophia, but please check and make sure the ship has the electrical pa

Konev said, "Write discussing the possible uses of Albert's instrument, Natalya. If I learn something of importance from Shapirov's skeptic waves and Albert date not, he thinks I will keep it from him under the excess that it is a state secret

T dosh mean 'green fields.' That is non-sense. Suppose you sense something very significant and I dosh'. Might is not occur to you that the knowledge would be a state secret, as miniaturation itself is? Would you then tell me that knowledge and risk the wrath of your Greenal Co

Koney caid mildly, 'We need Abset's cooperation. It is his machine and his program and I are sum he knows how to work it at less than perfect efficiency. If his is not completely assured of our honesy and goodwill, he may arrange to have us sums mething. I am willing to have anything that I some if he will do the same

Kallians said, "Nanlys, Lague that we should be honset with Albert, since we must aik him to be honset with us. Using his own device with which he has experience, he is far nom likely to come up with something useful than we are. A policy of quid pro quo is likely to be far more to see advantage than to bic. - Just that so, Albert

Merrison suspected that the furziness was at least partly the route of literovian motion. Study there couldn't be mark of that, however, Probably each final stand of the branchings - each twig - met a cimilar twig or some neighboring neuron to form that intimate near-teach cilied a synapse. The suvering of the twig would not be strong encoded to be strong encoded to be the furziness.

Of course, it had to, for the ship was minimutating again. The ridges in the coll surfaces were becoming more prominent and were dividing into dones. Howevers the phospholipid dones the hairs were becoming repire. Receptore, thought Morrison. Each one of them was doviged to lisk on to a particular molecule that would be useful to the neuron and certainly glacose would be the more useful of those

He toid to encournese on those maleciales. These seemed to be gifteneings in the flaid which night have been the light of the adaptive tensor of it denoved up voli. Down the surface of the cold membrane ward actually clear if you looked at it denovy). It was more the surmalistic improvision of a surface than an actual one – to fery themes ware being reflected and no to be verse racking them on their enail actual SUL by the plane, to could make our a laid of printees in the field by war paoing through (ware realended-unvel) and among them, now and then, comeding agains a they left. Coining up, then opening again. The immedian orightenhood of the ship war, of course, within the minimutation field, so that among admended-unvel work were constantly defaulting as juits as they left. The

The receptor entroled the length of the ship and was integrater in outlines, as though it were embracing a pattern of bulges along the plastic half. The bull was unstoch and futures/ess to the eye, of coarses, bet Morrison was quite certain that there was an electric field that bulged in jor the locations where the hydroxy jorapore would be in the glacopyranous encurate, the bulges along the plastic half. The bull was unstoch and futures/ess to the eye, of coarses, bet Morrison was quite certain that there was an electric field that bulged in jor the locations where the hydroxy jorapore would be in the glacopyranous encurate, the bulges along the plastic half. The bull was unstoch and futures/ess to the eye, of coarses, bet Morrison was quite certain that there was an electric field that bulged in jor the locations where the hydroxy jorapore would be in the glacopyranous encurate, the bulges along the plastic half. The bull was unstoch and futures/ess to the eye, of coarses, bet Morrison was quite certain that there was an electric field that bulged in jor the locations where the hydroxy jorapore would be in the glacopyranous encurate, the bulges along the plastic half.

as dangerous. Morrison understood that well by now.

a trying to point out that whenever someone ups Ugnot 'to me, I anomatically have the phrase' through the tailpe' in my mind. If I Impens to be concentrating on my comparts when someone usys' Ugnot, I will still hear the phrase in my mind and it will not mean that I an getting it from the skaptic waves on the comparter. Do you take my m

Merrison shrugged. "Phrases go through one's mind all the time. You hear something out of the corner of your ear, so to speak, and sometime later it potentiates your consciousness; or some stream

sing to respond at all for a while. He -----He indicated his re-

Merries lå de upp to dop everyting and to find a vay into a mitochendice, de small energy factory of the cell. A fire deale of mitochendical precesses had elli not been verhal our -but den be her palid any almost angrity at the dought. The deaptic verses cannot fire, He desend that to himself, as though typing to free a realization of priorities onto an overly carine bein bein that was threastening to diffuse in instru-

The receipter did not actually make connect with the day. This was pool, for hald 1 come any closer it would have contended to be receipted to a state of the receipted of the receipted to a state of

Finally Meetion said. "Look, Yari, we're movine so staickly that the motion is likely to distort the skettic waves hady."

ed in order to get things started and, in the end, be produced once more in quantities

'A fine citation' out Deduce is defined by the second of t

os thoughts invade your mind and one phrase surfaces; or you can have an auditory halls

When should HTH answame financial is a discissional in a discissio

d to be swimming through the phospholipid molecules (with a film of cholesterol molecules underneath, Montion knew), which opened before and closed behind

er phrase? Now laters, Yari, a hine, to be useful, most, however vaguely and inderectly, tie in with the quantum-interivity relationship. That we can report. Anything less than that is not compelling; it won't force belief. It will only succeed in huring us. I speak fi

that it did not drain the ship percentibly, or bring about spontaneous dominianzization, or do any damage. - Or, at least, it seemed to do

Those who say "A penny for your thoughts" are usually being over

-- Dephney Senior

CHAPTER 14 -- AXON

Morrison briefed at Koney's order. (It had definitely been that.)

Knew auded, "An you ma? W/w net moving quickly a uit. W/w jord drifting with the instance to make contain that the small molecules are all mole available to the organetic structure of the cell. The movement is very dow on the nemal cule, it sums fast only on centralization cule. Do Have to tank or advantage of the cell.

'Actually, 'to Kitalian', 'Glecow - or any other simple sugar in the body - bideog to a certain molecular configuration, so that we call it D-glucoos. I've simply alread the partern to its mirror image. We have become L-glucoos and then init's an empres that will such as nove, any more than any of us are likely to put a right those on a left foor. - Now we can more about treely.' The vocids which had formed on their introduction to the collidar interior had broken up and Morrison gave up as boptions any anterprise to follow what was going on. Fugureents anotabline were enveloped by much larger enzyme molecules that seemed to anterest them and then state. Presentably, as alreed vicin of the enzymatic spaces was wet free to be embraced again by another enzyme

fir i El Dunment

Apparently, the same thought occurred to Koney, for he said, "We're finally inside the nearon, Albert. Let's not be touries. What do you find in the way of skeptic waves new?

Re: (E.D., annov, Jan P., Merian, Pinces, 2004) in Distantion 5. Marce Famole 3. Westers, 2005, 31, 520 minuters 2006 and

Morrison bit his lips. Of coarse. He had again forgotten how miniatatization distorted his perception. And again Koney was completely right. "It might be bener, though," said Montoon, fujtring for self-respect, "If we changed back to D-placoos and allowed an enzyme to starth as up. The combined size would dow as down and make it easier to pick up the waves." "We don't have to dow down. The nerve impales travels at a minimum of two meters per second in real-velocity and in apparent velocity at our size that's about seventy times the mail speed of Tight. As compared with that, our speed, however great it seams, is trivial. Exen if we are moving at the apparent speed of a recket ship, to the nerve impales we seem virtually motivales." nrises finds the am is surrenter and that factors with Kanes. Then was such a fining arbitry to right R care a quick solvering face or Kalizin, with the according that do weaks by ecompary. So met his glass solvery and with no race of a since. In fact, he chandra third lighty a dough to usy (Merrison imagined). "What do you cap Bonnova (Morrison glasced over his left shoulder) seemed oblivious to the exchange. She was bury with her instrument and Morrison wondered what the could be so intent on, considering that the dup's engines were off and they were merely diffing with the current. As for Dentures - with the engines off - he was the one crow member who, in truth, had nothing to do at the moment (accept to keep half an eye at the material up ahead in case of an unexpected emergency) He wid. "Come. Albert, study the skentic waves and eive us some answers. Then we can know this chace. It extremely exciting being initia a cell for those who like it, but alwady I an unite central have some neouth. My father used to use: The most exciting mart of any tric is machine home annis." Boranova said, "Arkady--" "Yes. Natasha." "Save a few words for tomorrow." Morrison noticed the trace of a smile on her lips. "Carnialdy, Natasha. I suspect an attempt at saccases, but I shall do as you up," And though he supped his month due with an exaggented click of his teeth, he begen to how very quiedy to himself, a naw in the minor mode. Merrison felt a little astandade. They had been in the ship now for a little isos than five hours -- but it fult the expiratent number of days, pethaps years. Yet, unlike Arkady and doepists his earlier feelings of wrree, he was not mady to kave Stapirov's body. He felt a strong urge to explore the cell and his thoughts reseal on the possibility Kaliain must have been thinking along similar lines, for the said in a soft, invospective rose, "What a dame to be the fleet people inside the most complex of all living cells and to do nothing at all about invostigating it properly." "That is exactly --" beran Morrison, then thought better of it and let the work dansle. Koney owing his arm as though he were driving off hordes of insects. 'I carit understand this. We are in the cell and we came here for a specific purpose. Albert, focus on the slappic waves.' "I am doine so." said Morrison sharriy. "In fact, I have done so. -- Look." Koney resend his head, then unchapped himself, so that he could nam around and peer over the back of his seat. He started at Morrison's small screen and said, "The waves seem sharper." They are sharper. They'ss more intense and they show finer oscillations than I've ever sees. Come to think of 1,1 wooder how fine they can got. Somer or kiner, an oscillation, if fine enough, will represent the wobbling of a single decrems - and then we have to take into account the ascertainty principle "You forget. Write miniaturized and Planck's constant is nine orders of magnitude smaller for us than it is under standard conditions. You forget," protocol Mistrice, eager to cach the other in a miscorp thic time, "that the waves are reduced by that much before they such us. Those waves are searchy where they should be relative to the uncertainty principle, therefore." Koney hesizated a bare moment. "It doesn't matter. We're looking at something now and there's no perceptible uncertainty blarring. What does it mean." "It supports my theory," said Morrison. "This is exactly what I ought to see inside a cell if my interpretation of skeptic wave "That's not what I mean. We began with the assumption that your theory was cornect. Now it's no longer an assumption, it's a demonstrated fact, and I congrantiant you. But what does it mean? What do those slaptic waves show Shapirov to be thinking?" erison shock his head. There no data - zero data - on the correlation of such waves and specific thoughts. It would take years to gather such a correlation, if it could be done at all." "But nothing the destrict wants when this clear and internet renduce an induction effect on year brain. Are was acting any of year farmers images?" Morrison thought for a moment, then shook his head, "None? From behind him came a quist voice, 'Trn getting something, Albert Morrison tamed. "You, Natalya?" "Yes, if s odd – but I am Koney demanded, "What are you getting, Natalya?" Boranova hesitaned, concentrating. "Carlosity. Well, it's not exactly an image of anything. Just an impression. I feel cu "And so you might," said Morrison. "It needs no improvision from outside to produce such a feeline under these circumstances." "No no. I know what my own thoughts and improvious are like. This is imposed from outside." Morrison said. "Do you feel it right now?" "Yes. It comes and goes a little, but I feel it right now." "All right, What about pow?" Boranova looked surprised. "It stopped suddenly. -- Did you turn off your machine?" Turned is down. Now, you will as when you ful the senation and when you don't. 'He turned to look at Kalissis, insteding to sill her to ogo of its nothing that would indices when he turned the machine down or up, but de van stating out at the citl, obviously lost in the marvel of waching the instants of a senator. He wouldned f, at the moment, the heard - or cared - what we He tamed away and said. "Natalya, close your even and concentrate, her say 'on' when you set the sensation and 'off' when you don't." For several minutes, she complied with his suggestion. Morrison said to Koney. "Does the machine make a noise when it is turned down or un? Is there are thing you can hear or sense?" Koney shock his head. "Tin not aware of anything." "Then there's no mistake. She's setting the sensation only when the machine is on." Donhary, who, unlike Kulinin, had followed everything, unit. "But why?" His eyes marrowed. "The brain waves are there whether your machine detects them or not. She should get the feeling of cariosity all the time." No mi, cald Metrices, "My device filters out if the components but the actual despite waves. Without the machine, the just gen a continued must of unstation, response, correlations, and mixed Bury of all Bads. With the machine, the just only the despite waves, which further demonstrates the usefulness of any theory. "I don't get anything at all," said Deshney, frowning. "Doesn't that destroy your theory?" Merrison thragged "Brain are complicated mechanisms. Natilya gets it. You don't. For the manue, asibler do 1. Majde this particular darptic wave component fits smathing in Natilya's brain, not is ours. Tin nor going to be able to explain everything at once. -- Do you get anything, Koner?-"No," he answered, as discontented as Dezhnev had been. "Yet I obtained impressions when we were outside the neuron." errison shook his head and said nothing. Koney burst out. (Curl) was not seerfhing but just a young facility of curlouity. Natshey?" Boranova, "No, Yuti, I carlt. Not at this moment. But you remember Pyor Shapirov. He was curious about everything. "I remember, but that doesn't help. Albert, in what direction are we moving?" Albert said, "Downstream. It's the only direction in which we can move." "No no." Then, in sudden anger, "Is that a joke? Are you trying to be Morrison said, "Not at all. You asked in what direction we were going. What other answer could I have given you? Samly the compass directions have no meaning here." Koner stall. "All right. Story. The ensuing bees file vary hears. On the other stall of the cell, it goves the other way. It's a circulations. But the nerve implies post one way only, from the database to the assn. Are we on the sole of the cell that's taking us in the same direction as the sorres implies or in the other direction. "Does it matter?" said Morrison. T think it does. Can your device tell you in which direction th 'Yes, cartainly. There should be a slight shift in the shares of the waves, decending on whether they are meeting the device head-on or from the rear.' "And we're movine in the direction of the impulse. 'Good' A stroke of lack. We're heading for the axon, then." 'So it would seem. Boranova said. "And if we are heading for the anon?" Koney said, 'Naralya, think' The skeptic waves travel along the surface of the cell. The cell here is wide and relatively large. The skeptic waves spead out over a large surface and are weaken ndy. As the cell approaches the acon, it narrows. The same ideal is a very long table compand to the cell - ind very narrow. The waves must encempted in the same idea of Boranova said. "You think, then, that we can receive more effectively in the axon?" "Much more effectively. If you can detect carlosity now, it should be overwhelming in the anon. And you might be able to detect what Shapirov is curious about." "It may turn out to be totally unimportant," said Morrison thoushtfully. "What if he's carious about why he should be blue there and not movine?" "No," said Konev sharply, "that would not interest him. I knew Shapirov well. You didn't." Marrison podded "That's true encouch *All his waking time was consumed with the minimutration process," said Konev. "All his durance, too, I suspect. And toward the end, in the last few weeks before the -- the accident took place, he was working, thinking, dramning of the connection between quantum and relativity, thinking of how to make minimutration and de "Surely," said Montison, "If that were the case, he must have given some hints as to some of the details of his thinking "No, he was a child in some ways. We know what he was thinking of, but not whether he was making progress or is what direction. What he lowed to do was to present it to us whele, complete. - Remember, Nankya, how he lowed to do that "He did that with minimatization in back". When he faulty wrote his paper - it was a young book -errison said casually, "Where was it published Knew meeted. "You knew it search rabbided, it had a limited circulation to those who had to knew. It's searchers when you're likely ever to see it " Boranova said, "Yuri, don't be needleedy insulting. Albert is a follow crew member and a guest. He is not to be treated as a spy." Konev said, "If you up so, Natalya. Newtheless, if Shapitev is carison, so immostly curious that Natalya gets that message, it can be only about the quantum-relativity connection. If we can get some details about that, any details at all, we'll have a starting point and can continue "And you think we'll get those details in the axon?" "Yes, Tm sare of it." Konev clenched both first as though preparing to get a stranglehold on the facts. Morrison looked away. He was not sure of it. Increasingly, it was beginning to look to him as though manues were moving in another disection altogether and that that was just as well-He tried not to show it, but he was as encited as Konev was. Dim objects to either side loomed up ahead, drifted to one side, left or right, and full behind. Ribosomes? Goigi apparatus? Hibrik of one sort or another? Morrison could not tell. From the olecule size, nothing, not even the sharpest, most familiar intracellular object, would look familiar, let alon They were racine through a strange land of indefinitences and Morrison could not, no matter how he tried, victure his surroundines as those with which he was familiar from electron microscrathy. He wondered if, somewhere beyond where the light of the ship's beam exampled, there would be the endless volume of the cell's nucleus. Imagine being within submicroscopic distance of it and yet never seeing it. He concentrated on the intersection events were used to him, once assis, that he outht to make out the water molecules that made up W recent of all the molecules in the call, that have recentance being the direct consequence of the fact that they were installed molecules the water molecules that made up W recent of all the molecules in the call, that have recentance being the direct consequence of the fact that they were installed molecules the water molecules that made up W recent of all the molecules in the call, that have recentance being the direct consequence of the fact that they were installed molecules that molecules that the second molecules that the He could not be ware. Focus his eyes though he did and as tightly as he could, what he saw was only a fairs gilture - a photon, perhaps, beaucing off such a molecule and flashing back toward his eye. At bost, he would only see one or two from any given water molecule. He was suddenly aware of Kaliinin's head, bending toward his. Her hair brushed his face and he noticed, as he had once or twice before, the fresh scent of her sharepoo She said. "This is terrible, Albert." Her breath was a little strong and Morrison flinched before he She noticed, for her fineers came up sharris, covering her mouth, and she mumbled. 'Tra sorry,' Morrison shook his head slightly, "My own breath ion't exactly a bed of roses. - Tension, nothing much to eat. A drink of water might help, Natalya." One drink set off everybody, of course, in a chain reaction. Kallinin fingered a small white pellet. 'Poppermint drop' Merrison held out his hand and amiled "Is it nermined?" Kalinin's eye flickered back toward Boranova and she gave a Who-cares shrug. Having passed the drop to Morrison, Sophia popped another in her month. Then she said again, "This is turrible, Albert." "What is, Sophia?" fow can we pass through this cell without examining it in detail?" "We have a specific mission." "Yee, but to one may be back within a brain cell for many years. Perhaps, never. When, in the finance, someone will read that this hilp and this rever memly need through, looking neither to right or left, what harbarians they will think we must have been." She was whispering very solidy and their heads were bent close together. Morrison found himself rather enjoying it. Had he grown so calloased to the threat of the situation - the constant skirring along the edge of the abyos of spontaneous dominiatization, the possibility of split-second death at any moment - that he could take joy from the trivial fact that his lips were so close to the porty face of a woman? Well, why quarmit with that? Let the neurness anosthetize him, so that he might for a moment for Morrison remembered the sharp image he had had to brief a time before of a happy, unling, beautiful gid. He had not necessized the thought as his own, so unexpectedly had it come out of northers, and it didn't mure, even now, but he remembered it distinctly and the memory squeezed at his heart with a warm foelage. He had the momentary impulse to kiss her lightly, just a touch upon the cheek one with his lips - and fought it down. If she decided to take it amiss, he would feel like an incredible feel. Morrison said gently, "The people of the future will know we have a mission. They will understand." "I wonder," Sophia said, then passed and sent a quick and almost fearful look in the direction of Koney, who as always sat stiff and detached at ally sign of speech o She tarmed to her companie, whiched is to the word-processor mode, and topped on in rapid Rossian: YURI IS A FANATIC WHO SACEPICIS EVERYTHING TO HIS MANA. THERE IS NO CHANCE OF READBOG THOUGHTS, BUT HIE PRESUARES EVERYCON. She baaked is, then apped on: WLARE HIS VERTIMES and baaked is a one-For "we," mad "1," thought Morrison sadly. He looked at his own in estantly. It seemed to him that the thought waves, which he had dimmed to low, were growing more intense. Montion looked out as though he might be able to tell just how near the atom they new ware, but, of course, there was no way of knowing

ver, mage 1, mongen territorie saay, ne tosse at nis ovei instrument hexizetly. It seemed to him that the thought waves, which he had dimmed to low, ware growing now instrust. Munison holde out at though he night be able to sell just low near the atom they new ware, but, of course, there was no way of lawwing.

Br / E. Duranney Albard S. Merian Private S. Mittak Diskstels and Mission Famole S.W. 1997-1993 (1932). S 200 Historie V

He Manked the radiation, weltched to word-processing, and primed out in Roman-lettered Russian: HE, TOO, IS HES VECTEM.

Kaliain at once primed savagely: NO. I DON'T BILIEVE PEOPLE ARE THEIR OWN VECTIMS. Morrison thought suffy of his cose-time wife, his two children, his cover inshifts to present his cheery presentively, or, abernatively, to walk any trans it, and tapped cost I BELEVE WE ARE EACH OF US MORE A VECTIM OF OURSELVES THAN OF ANYONE ELSE and returned it quickly to the thoughtwave mod He sucked in his breath sharply. The waves on his scneen had risen high in immetry despite the fact that the device was still at low.

Morrison opened his month to comment on the fact, but Durhney made that unnecessary. "Yest," he said, "the cell membrane is curving in and we're curving in with it." That would account for it, shought Microison. The cell was manying in swated the axon and the skeptic waves were being eneromously concentrated. His device, having fibrared out everything edue, would indiate the wave function of the skeptic waves throughout the interior of the ship. And with what results

Koney said with delight. "We'll see what harmons now. Albert, keep your machine working at top intensity."

Boranova said, "I hope that whatever happens gives us our answer or at least a start to our answer. I have gr "I don't Mame you," said Durhney. "As my father used to say: "The longer it takes to get to a point, the blanter it turns out to be."

It seemed to Morrison that every line of Konev's stiff body now betokened exchement and expectant triamph -- but Morrison did not join in that expectation

Morrison stared outward. They were well into the axon now and being carried along it by the fluid stream within the cell.

There was no indicates of the incendity ratio ones, however. The duty was notice with the carrent and they was the less in the was of macromolecules or evanilies in the acare than had been in the oil blots. There was exclused libers withsmadlar the carrent and remaining motionless with protect to the call methodars.

So he gave up. There was nothing to look at outside.

He outly, in any case, to be looking at his screen. The skeretic waves were becoming even more instrust, be could so. It had erown difficult to wine out the nonskeretic material. It was so strong that it flooded the computer's excelsion canadity.

What's more, the tight, shabeness vibration of the skappic waves had become a veries of impgalar spikes. Even at full expansion, it was clear he wan't getting all the detail that existed. Moreion had a clear vision of the necessity of a laser primote clear encough to be placed under a microscope.

Koney had unchasped himself and had half-lifted himself over the back of his seat so that he might stare at the screen. He said, "I haven't seen it like that before."

Morrison ruplied, 'Nor have I and I have been studying skeptic waves for nearly twenty years. Nothing like this, "I was right, then, about the axon?"

"Absolutely, Yuri. The waves have

"And the meaning, then?"

. Morrison specal out his hands helpleosly. "There you have me. Since I have never seen anything like this, I obviously cash interpret is."

"No no," said Koney impatiently. "You keep concurrenting on the screen and I keep thinking about induction. Our own minds are the true succeptors - by way of your machine. What do you necessor? Images? World?" "Nothing," said Morrison.

"That's impossible."

"Are you getting anything?"

"It's your machine. Adjusted to you

"You've had images before, Yuri."

Deshnev's voice broke in dryly, "My father used to say: 'If you want to hear, you must begin by linening."

Boranova said. "Dezhnov Senior is correct. We can meetve nothing if we fill our minds with contention and shouts."

Koney drow a deep breath and said with a softness that was most uncharacteristic of him, "Very well, then, let us concentrate An unnatural quiet full over the shin's crew.

Then Kaliinin said, breaking the silence rather timidly, "There is no time."

"No time for what, Sorbia," said Bormova.

"I mean that's the phrase I sensed: "There is no time."

Morrison said. "Are you saving that you received it from Sharinty's skartic waves?"

"I don't know. Is that possible?"

Bezzers said, "A moment before That the same thought. Is occured to ne that betwee way of tacklarge the protein might be to undy the received skept's wave on the second ad to wait for sadden changes. It might be the change of protein might be an encremently long draw-one afford and for the wait long draw betwee the sadden changes. It might be the change of protein might be the change of protein might be an encremently long draw-one afford and for the wait long draw betwee the sadden changes.

"In other words," said Morrison, "you thought, "There is no time."

"Yes," said Boranova, 'but it was my own thought.

"How can you know, Natalya?" said Morrison.

"I know my own thoughts." You also know your own draws, bet sometimes drawm arise out of external estimal. Suppose you receive the shought There is no sime. Because you are not accessing to maching thoughe, you quickly build up a line of how association than makes it resconded in you to be that you have bad the thought T

"That may be so, but how does one tell, Albert?"

Trn not sure, but Sophia apparently sensed the same phrase and we might ask if the were thinking something independently that would give rise to the phrase as a matter of course. "No, I was not," said Kaliinin. "I was trying to keep my mind empty. It just came in."

"I didn't sense anything," said Montson. "How about you, Yuri?"

Koney shock his head, fenerates ferrorizedly at his failure. "No. I didn's "

"In any case," said Morrison floringhtfilly, "It needshi mean anything, Natajas full it might be an idle thought that aroso out of a series of provious thoughts in a natural way and with more superficial meaning. Even if the thought had arisen in Shapizev's mind, it might be equily superficial three."

"Perhaps," said Koney, "but pathaps not. His whole life and mind were bound up in the problems of miniamrization. He would be thinking of nothing else."

"You keep usying that," said Montoon, "but, actually, that is remaratic nessense. No one thinks of nothing else. The most levesick Romes in history could not concentrate on his Juliet forever. A twinge of colic, a distant sound, and he would be distracted at once."

"Nevertheless, we must take anything Shapirov says as possibly significant."

Possibly," and Morrison. That what if he wave trying to work our the extension of the minimumization theory and decided to mean he had no time, that there was insufficient time to complete his work?" Kere dock is bad, may, sound is bad with discussion has in a dar appior. It wand is bad with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the down of mark to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the down of mark to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the down of the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the down of the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the pool of light reported is to do with a discussion is the down of the down of the pool of light reported is to down of the down

Boranova said. "Very farfetched."

"Of coarse," said Koney, "but worth thinking about. We must record every impression we get, however data, however apparent

"I plan to do precissily that, Yuri," said Boranova,

Konev said, "Then quiet again. Let's see if we can get anything more."

Merrison concentrated forcely, his syst half-baried under jutting systemses, but those same syst were fixed on Koney, who sighed and said is a whisper, "I get something over and over - tra times c equals on sub s." Morrison said, 'I got that, too, but I thought it was 'm times c square.'

"No," said Koney tightly. "Try again

Morrison concentrated, then, onite abashed, said. "You're right, I set it, too: 'nu times c equals m sub s.' What does it mean?"

Who can say at first glasse? However, if this is in Stapinov's mind, it means something. We can assume that m is radiational frequency, c the qued of light, and m sub six the standard mass - that is, the mass at met under onlineary conditions. In the light of --Boranova's arms lifted with an admonitory forefinger upraised. Koney stopped short and said uncomfortably, "But that is neither here nor there."

Morrison grinned, "Classified material, eb, Yari $\mathcal T$

And then Dichney's voice seanded with an unaccestomed penalance to it. "How is it," he said, "that you are hearing all these things about time and standard mass and whatnot and I sense nothing? Is it that I are not a scientist?"

Merrices said, "I doubt that that has anything to do with k. Binise are different. Maybe they come is different types the way blood does. Blood is blood by you can't always transforms one person's blood into another. Your brain may be sufficiently different from Stapitory's to that there is no sensory crossover

"Only mine?" "Not only yours. There may be billions of minds that can pick up nothing from Shapirov. You'll notice that Sophia and Natalya can pick up the same things, which Yari and I cannot - and vice versa."

"Two men and two women," gramped Dezhnev, "and I am what?"

Koney cald impatiently, "You are wanting our time, Arkady, Lar's not endlessly discuss every tiny thing we pick up. We have more to hear and little time to do it in. If you concentrate a little harder, Arkady, you, noe, may sense something."

It was broken occasionally by a soft marmar from one or another who reported sensing an image or a scrap of words. Durhney contributed only one thing: "I sense a feeling of hanger, but it may be my own."

"Undoubtedy," said Boraneva dryly. "Console yourself with the thought, Arkady, that when we get out of hem, you will be allowed succeds and thirds of every dob and unlimited volka."

Dezhnev grinned almost lasciviously at the thought.

Morrison said, "We don't seem to come across anything mathematical or even out of the ordinary. I insist that even Shapirov must have the great majority of his thoughts concerned with trivia."

"Nevertheless," granted Konev under his breath, "we listen.

"For how long, Yuti?"

'Till the end of the aton. Right down to the end '

Morrison said. "Do you then intend to run into the synapses or will you double back?"

"We will go as close to the sympose as possible. That will bring us into the immediate neighborhood of the adjoining nerve cell and the skeptic waves may be even more easily sensed at that cracial point of transfer than an

Durhney said. "Yes, Yari, but you are not the cantain. -- Natasha, little flower, is that what you wish, too?"

Boranewa said, "Why not? Yuri is right. The synapse is a unique spot and we know nothing about it."

Task only because half our rower surply has now been consumed. How long date we continue to remain within the body?"

"Long enough," said Boranova, "to reach the synapse, certainly."

And silence fell once more.

The ship continued to move along the enormous length of the axon and Konev dictated the actions of the others more and mo

Whatever you get, report. It doesn't maner whether it makes sense or not, whether it's one word or a paragraph. If it's an image, describe it. Even it you think it's your own thought, supert is if theor's the slightest doubt.

"You'll have meaningless chanter," said Dezhnev, apparently still amoyed at his nonreceiving brain.

"Of coarse, but two or three meanineful hints will raw all. And we won't know what's meanineful until we examine everythine." Deshnev said, "If I sense something I think isn't mine, do I throw it in, $\cos \tau$

.
"You, especially," said Konev. "If you're as insensitive as you seem to think, anything you do get may be particularly important. Now, please, no more talk. Every second of conversation may mean we miss so And them began a period of disjointed phrases out of which, in Morrison's opinion, it was impossible to make sense.

One surprise came when Kaliinin said suddenly, "Nobel Prim?" Koney looked up sharply and almost responded -- then, as though multiving who had said it, he subsided.

rrison said, trying not to sound mocking, "Did you get that, too, Yuri?"

Koney nodded. "At almost the same time." "That's the first crossover between a man and woman," said Morrison. 'I suppose Shapinv had his mind on it in connection with his extension of miniaterization theory

'Undoubtedly. But his Nobel Prize was sure for what he had already done in miniaturization.

"Which is classified and therefore unknown."

'Yes. But once we perfect the process, it will no longer be unknown "Let's hope so," said Morrison sandonically.

Koney snapped, "We are no more securitye than you Ar

"All right. I'm not argoing," but Morrison grinned broadly at Konev, who was peering over his shoulder at him, and that seemed to irritate the younger man even further. At one point, Deshney said, "Hawking,"

Morrison's evolveous lifted in surneise. He had not expected this,

Boranova said, looking displeased, "What is this, Arkady?"

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"I said, 'Rawking," said Dezhnev defensively. "Out of nowhere it popped into my mind. You told me to tell you anything that did." "It is an English word," said Bonneva, "that means 'spitting."

"Or 'selling," said Monison cheerfully.

Denharv said, "I don't know enough English to k

'So it was,' said Konsv unconfortably. 'Sophan Hawking. He was a great English theoretical physicist of over a century ago. I was thinking of him, too, but I thought it was my own thought.

Morrison said, 'Good, Arkady. That might be usuful.'

Durbany's face still with a stile. "The not altoesther unders, then. As my father used to say: "If the words of a wise man are few, they are nevertheless worth literation to." An interminable half blow hare, Moreton caid graphy, An we getting anywhere at all? In sense to me that most of the phrases and images tail in southing. Nobel Phile' tails us, masenably enough, that Shapiror drough of winning one, but we know that That king' tails us that that physicist's work was significant perhaps, in connection with the extension of minant rization, but it doesn't tell us why."

It was not Know who rose to the defense, as Morrison would have expected but Bozanova, Know, who might have been readvise himself for a resences, seemed willing, on this occasion, to let the cantain bear the weight.

Boznova cald, "We are dealing with an enormous cryptogram, Albert. Stupiorv is a man in a coma and his brain is not thinking in a disciplined or orderly fashion. It is sparking wildly, those parts of it that remain whole, perhaps matematic. We collect or whine without distinction and it will all be studied by those of us with a deep understanding of mini theory. They may see meaning where you see none. And a bit of meaning, in one corner of the field, may be the start o it will stread to all parts of it. What we are doine makes sense and

Konce then said, 'Besides, Albert, there is something else we can try. We are approaching a synapse. This asson will end essentially and split up into many fibers, each of which will approach but not join with the dendritie of a neighboring r "I know that," said Morrison impatiently.

"The nerve implote, including the skeptic waves, will have to jump the tiny gap of the sympo and, in doing so, the dominant thoughts will be loss anomated than the others. In short, if we jump the sympose, no, we will such a region when we may, for a while at kast, dence what we want to have with "Really?" asked Monison archiv. "This notion of differential attenuation is new to me."

"It's the result of painstaking Soviet work in the area."

Koney fired up at once, "What do you mean, 'Ah?'? Is that a dismissal of the value of the work?" 'Of coarse it is. If it's Soviet work, it means nothing.'

"I just mean that I haven't read or heard anything about it," Morrison said in defens "The work was done by Madame Nastiaspenskaya. I presume you've heard of her."

"Yes, I have." "But you don't read her papers, is that it?"

Yuri, I can't keep up with the English-language literature, let alone with -"Well when this is over. If are that was not a collection of her meters and some may educate second ("

Thank you, but may I say that on the face of it I think the finding is an unlikely one. If some types of meanal activity survive a synapse better than others, then, considering that these are many handreds of billions of synapses in the brain, all constantly in use, the final result would be that only a tay properties of thoughts would survive at all."

This net as simple as that," said Know. "The trivial thoughts are net wiped out. They common as a lower level of immunity and don't decline indefinitely. It's just that, in the immediate neighborhood of a sympto, the important thoughts are, for a time, relatively strengthmed" "Is there evidence for this? Or is it only a suggestion?"

experiments, that evidence will be hardened. The same. There are some people among when this sympse effect is much enrager than average. Why due can crustive individuals concentrate so hard and so long, if they are not less directed by this? And why, on the contrary, are brillast scholars waldowed "Very well. If we find something, I won't quartel with the rationale."

Dehney stal, "Bar what happen when we come to the end of the axon? The stream of fluid we're stdarg well just make a U-ram at that point and carry us back again against the opposite well of the axon. Do I force my way through the membrane? "No." said Koney. "Of course not. We'd damage the cell. We'll have to take on the electric charge nations of activicholine. That carries the nerve introduce national across the vename.

Boranova said, "Sophia, you can give the ship an acetykcholine pattern, can't you?" "I can," said Kaliinin. "but aren't the acetykholine molecules active on the outside of the cell?"

"Nevertheless, the cell may have a mechanism for ejecting them. We'll try." And the trip along the seemingly endless axon continued.

Staddardy the end of the anno was in sight. There was no hirst, no warning. Known outsind it first. He was watching and he knew what he was watching far, but Morrison gave him full credit. He himself was watching, no, and knew what he was watching far, and yor did not one it when To be sure. Koney was in the front sure, while Morrison had to stare past Koney's head. That was not much of an excuse either.

In the curiously ineffective light of the ship's beacon, it was clear that there was a hollow ahead and yet the current was beginning to veer away from it

The accur year beginning to break off into breakdow, into dustities like three at the other end of the accurse, at the and when the mackanel call body year. The accurate detables at the for end of the cell were forwer and thisses, but hey ways them. Undersheldly, a portion of the cellular transmission into it, but the shape was in the main stream that carved away and they could take no character

They would have to push into the first dendrine encountered -- if it could be done.

"There, Arkady, there," cried Koney, resisting, and it was only then that all the rest realized they were reaching the end of the axon. "Use your motors, Arkady, and reach over," Morrison could make out the soft throbbing of the motors as they edged the ship toward the side of the stream. The dendrite toward which they aimed was a tube fast was slipping ddeways, a hape tube at their size scale, so hape they could only see a small arc of its circumference. They continued to edge closer to it and Morrison found himself learning toward the dendrite, as though adding body English could improve matters.

But it was not a manue of reaching the tabe itself, merely moving over an eddying section of fluid, a rashing of water molecules that quiened into genile circles and then slipped beyond into another stream that was curving off in another direction.

The ship made the transition and was suddenly planging forward into the tube opening. "Turn off the motors," said Koney excitedly.

ot yet," grambled Dezhney. "We may be too near the coun riging from this thing. Let me slip over a bit closer to the wall."

He dd to, bet that did net take long. They were new essentially moving with the current, not against is. And when Dezhnev did family shat off the ougles and pushed back his dump, graping hair, be burved a great breach and said, "Everything we do consumes a two of energy. There's a limit, Yat, there's a limit. "We'll worry about that later," said Konev impatiently.

"Will we'l' said Darhney. "My father always said: "Later is usually too late." -- Natalya, don't leave all this to Yuri. I don't trust his attinude toward our energy supply. "Calm yourself, Arkady. I will take care to override Yuri if it becomes necessary. - Yuri, the dendrine is not very long, is it?"

"We will come to the ending in short order, Natalya."

'In that case, Sophia, please see to it that we are ready to adopt the acetylcholine pattern at a moment's notice.'

fou'll give me the signal, then?" said Kaliinin.

"I will not have to. Sorbia. I'm sure that Yuri will whoon like a Cossack when the end is in sieht. Shift the nation to acetylcholine at that moment." They continued sliding along the final tubular remnant of the neuron they had entered a consi arable time before. It seemed to Morrison that, as the dendrite narrow, he could see the wall acc above him, but that was illusion. Common sumse told him that even at its narrowest, the tabe would appear to be a few kilometers across at their present molecular size

And, as Bergeova had foressen. Koney lithed his voice in a creat cry, norbably onto unaverse that he was doine so. "The end is ahead, Ouick, Acertricholine before we're swent around and back."

Kallinis's fugures filekaned over the keybeard. There was no indication from inside the ship that anything about it had changed, bet onnewhere up should was an acceptibilities receptor – or, more likely, handweds of them – and the partners module, positive to separitive and segarity to positive, on that the attraction between ship and receptor was sharp and grant

They were relied out of the structure and the out-the wall of the dendrits. For a few minutes they continued to be relied through the intercellular medium hereases the dendrits of the neuron they had lost left and the dendrits of the minutes the minutes the dendrits of the minutes

Morrison saw almost nothing. The ship, he fult, was sliding along -- or through -- a complex protein molecule and then he noticed the formation of a concavity, as when the ship had first entered the first neuron Koney had unclasped himself so that he could stand up. (Quine obviously, he was too excited to feel this was something he could do sitting down.)

He usid almost ensurings. "Now according to the Nationenskara breechesis, the Effective out of the innovant theoretics is not evident immediately after the evaness. Once the cell body is arrenaded, the difference tades. So once wa are in the asiethorize dendite, come yara minds. Be randy for greetings. Sar whatever you have out load. Describe any inness. The recent eventuality. The second eventuality of the asymptotic dendite.

CHAPTER 15 -- ALONE

Good company robs even death of some of its terrors. -- Dephney Senior

Morrison watched what followed with a certain detachment. He did not intend to participate actively. If something forced itself into his mind, he would respond and report it. It would be unscientific not to

Kallinin, at his left, looked grim and her fingers were idle. He leaned toward her and whispered, "Have you got us back as L-glacose?" She nodded.

He said, "Are you aware of this Nastiaspenskaya hypothesis?" She said, "It's not in my field. I've never heard of it."

"Do you believe it?"

But Kalinin was not to be trapped. She said, 'Tm not qualified either to believe or disbelieve, but he believes it. - Because he wants to.' "Do you sense anything?"

"Nothing more than before."

Denhary was, of course, silent. Bonarova occasionally produced a crisp word or two, which, however, seemed to Morris Only Konev seemed to maintain enfanciants. At one point, he cried out, "Did anyone get that? Anyone? 'Ciscular thythm.''

was no direct answer and, after a while, Morrison said, "What does that mean, Yari?" Koney did not anywer. -- And even he error exist after a while and was reduced to starine blankly ahead as the ship moved orward in the fluid stream

Boranova asked, "Well, Yari?" Koney said tafter hearsely. "I do not understand it."

Denharv said, "Yari, little son, it may be this is a bad neuron and ini't doing much thinking. We'll have to try another and maybe another. The first one may have been simply beginner's lack: Know looked at him angely. We don't work with single cells. We're in a group of cells - a million of them or more - that are a center of crustive thought by Albert's theory. What one of them thicks, they all thick - with minor variations

Morrison said, "That's what I believe I have shown

Durhney said, "Then we don't go looking from cell to cell?" "It would be no use," said Morrison,

'Good,' said Derhnev heavily, 'because we don't have the time and we don't have the energy. So what do we do now?

In the silence that followed, Konry said again. "I do not understand it. Nastiasrenskava could not be wrone." And now Kallinin, with great deliberation, unclasped herself and stood up.

She said. "I want to say constitute and I don't want to be interruted. Nataba, listen to me, We have even far encosts. This is an experiment that perhans had to be done, even though, in my coincise, it was sure to full. Well, it has fulled."

She pointed a dim finger briefly at Koney, without looking at him. "Some people want to alter the Universe to their Haing. Whatever is not so, they would make so by sheer force of will -- socup that the Universe is beyond any person's will, spacese he ever so have

Tdoth Isove If Nastiaspondays is correct or not. Idoth Isove if Albert's devotes are correct or not. But this I know-shartbey think, and what any neuroscientist thinks about the beain generally, must be about a ransonably normal brain. Academician Shapitov's brain is not manualably normal. Twee percent of it is nonfunctioning-dead. The rost must be detorted in consequence and the fact that he has been in a come for weeks shows that.

they believe that if they only insist loadly enough and strongly enough, the obvious will retreat and the impossible will somehow come into being

"Any reasonable human being would malke that Shapievy cannot be thinking in normal faddion. His basis is an army in - in discarse, it is a factory in which all the equipment has been jurned loss. It is sparking randomly, mining books mboughts, scattered pieces, splinters of manney. Some ment" -- the pointed again -- 'won't admit it beam

Kence had now also suckaped and was also standing. He turned dowly and looked at Kallanin. (Mortions was annotident Kence was actually looking at her. And on his face there was to visible sign of ange or hared or conseque, It was a hangledgeed, with a wach of will conseque to the standing of the stand

Yet Koney's voice was steady and hard as he looked away from Kaliinin and turned to Boranova, addressing her

talya, was this po

'If you mean, Yuri, did Sophia say all this to me before this moment? She did not."

"Is there any mason we should be plagued with crew members who have no faith in our work? Why should such a person have agreed to come on this voyage?

(She's getting back at him with a vengeance, thought Morrison.)

Reference of a strange dual to the linear strang

"We've get well over a hundred phrases and images we've salvaged from Shapizov's thicking. Don't forget 'ns times c equals on sub c,' which must be significant. There's no possible mason to thick of that simply as a triviality." anova said, "Have you thought, Yuri, that it is po is that that fragment of a math sents something Shapirov tried and found wanting?"

Three thought of it, but why should it stack in his mind, in that case? It is certainly work investigating. And how much of what source to be trivial or meaningies would not be so if even on phrase or image gave us a necessary him. With each step forward, other things engine more scalely fall into phace. We certainly have no masses as yet to declare this vogage a failure – or any part is it?

Boranova nodded slightly. "Well, lef's hope you're right, Yuri, but, as Arkady has already asked, what do we do now? What, in your opinion, ought we to do now?"

With result deliberation. Know said. "There's one thire we haven't tied we. We've tied detection coulde the neuron. inside the acons. Inside the dendritus, surt the vename. but, in every stork case, we have tried it inside the shin. Inside its resummity insulation walls'.

"In that case, then," said Boranova, "are you suggesting that we make the amount conside the ship and within the cell fluid inelf? Remember, such an observer would still be inside a plastic suit."

"A plastic suit is not as thick as a plastic ship and the insulating effect would presumably be less. Besides, the computer itself need not be inside the suit."

Konew looked at him coolly. "There is only one possibility, Albert. The computer is your design and is made to match your brain. You are, of necessity, the most sometive to Shapinov's thoughts. It would be foolish in the highest degree to send out anyone else. Have you is mind for this, Albert."

Morrison's stomach clenched tightly. Not that! He couldn't be asked to do it again?

He tried to say on, but his month seemed to have dried completify and instantaneously and his could make no sound other than a throuty bios. It fluided through his inited that had been beginning to enjoy the fooling of not being a coveral, of wandering, by dip, through the brain cell functionly --- but be was a coveral, after all. "Not that?" he cried out, but it wasn't his voice: it was hisher by an octave. It was Kaliinin.

She had turned around to face Boranova, holding herself down in her sust with knuch

Nor they, Na they, Na tried spin passionarity, he chost hereing is excitament. This is overally suggesteen. Nor Albert has been on the more advalued and of 1 hadrit bases for him we singlet any and the over have mached this cuil Block at all. Why should have to determine advalues to a suggest and have - no escapeciand who The' was - "he thin do is. It double to real to o was advalues and the secand block at all. Why should have to determine advalues to a suggest and have - "he thin do is. It double to real to o was advalues and the secand block at all. Why should have to determine advalues and the secand block at all. Why should have to determine advalues to a suggest and have - "he thin do is. It double to real to o was advalues and the secand block at all. Why should have to determine advalues and the secand block at all. Why should have to determine advalues at a suggest at

Morrison, benuth his own flight, wondened fairely if Kalinin's emotion was due to a growing affection for him or a determination to oppose at every point any emong with of Knows's. There was a comer of Morrison's mind that was programic enough to be certain it was the latter

Kare's face had prove showly values as bythe points as had prove show values as bythe points as a bythe value back and points of the point of the second back as a bythe point of the second back as a bythe point back and points of the point back and points in the point is the point of the second back as a bythe point back and points and points in the point of the second back as a bythe point back and points and points and points and point in the point of the point of the point of the point back and points and point of the point of the point point point point point and point of the point of the point "True," said Morrison, finding his voice now, "but there is no reason to suppose that reception will be better outside the ship than inside."

Konev said, "Them is no reason to think the reverse, either. And as Dazhnev will tull you, our energy supply - and therefore our time - is decreasing. There is no room for delay. You'll

Morrison said in a low voice, which he honed would make the remark final. "Its sorry. I will not leave the ship." But Boranova had apparently made up her mind. "I'm afraid you'll have to, Albert," she said gently

"Yuri is right. Only you and your device can give us the information we need."

"I am certain there'll be no information

Boranova held out her two hands, palms upward. "Puthaps not, but we can't leave that a matter of conjecture. Let us find out."

Branevs and, "Abort, I promise you that if you do this con thing for exc, your part is all this will be reported housedly that the exception of the leage of the context beers of thought, the man who developed the developed the

Branneys updayd. "Yna fines men o glug the role of villainess openly.] I wedd tacher you had bean unified with the implication. - Yne, the ruth need net to sidl. That, ubre all, i the only wappet Edd against you. We cannot very will tern you or of the dulp by fores, ticce them is no adramage in your memory being enticle. You must also unsee poor Shapirov's theoght and for that we mee have your willing cooperation. We will revead you for that, but only for that

Morrison looked around at his crewmane/faces, warching for help. Boranova – steady enalying him. Konov – stering him down imperiosely, Dezhnev – looking awkward, nor willing to commit himself either way. And Kalinin ... his only hope. Morrison sword at her these hefelile and said. "What do you think Southin?"

Kallinin hexizated, then said in a voice that did not tremble. 'I think it is wrong to thusann you in this way. A task like this should be performed voluntarily and not under dance

Durhney, who had been humming very softly to himself, now said, "My old father used to say: There is no darses like one's own conscience and it is that which makes life so needlessly biner "My conscience doesn't trouble me in this matter," said Morrison. "Shall we put it to a vote?"

"It wouldn't matter," said Boraneva. "I am the captain and in a case like this I alone have the vote

"If I am out these and sense nothing, would you believe me?"

Boranova noddad. 'I would. After all, you might so uselly invent something that would seend useful if you wished us to be suitably grantlal. If you come back with nothing or u cy to believe that than if you instantly claimed you had heard some Koney said. "I am not likely to be fooled. If he comes in with something that seems innormat. I will be able to sell if it truly is. And now, suppr. we have had enough discussion. Lat's est?"

And Morrison, his heart beating and his throat tightening, managed to say, "Very well, I will go – but only for a brief time."

Merrison, of his own accord, stringed himself of his comes earnest. The first time (was it mally only a courbe of hours before?) it had seemed to be a violation of moderny; this second time it was almost

He was quite award, see with Kalinich help be roughd ann the wat, how cardy he could ack in his addesen. Deepite a good brackter, and a piece of checolare, his numedy was empty and he was glad be wa

They put his computer into his sheathed hands and Boranova said to him loadly, "Can you work it?"

er without too much difficulty. He knew he wouldn't hear her once he was outside the shin. He balanced the essentially weightless er in one hand and struck the keys carefully and rather gracelessly with the other. He shouted back, "I think I car Then, rather classely, they tied the computer to both his wrists with firm knots of touch plastic twize (reobably the same material of which the sait and the ship intell were made).

"So you don't lose it," Boranova called out.

Out into the air lock he went. He felt himself embraced by it, then pressured as the air in it was withdrawn, and then he was outside the shin.

Outside again. For only a brief sime, he had warmed the root, but what good was that? How could he confecte that, if the others within the ship related to let him back in? Already, he was sorty he had let himself be taiked out of the ship by any threat, but dated not articulate the thought. It would do him no good. Merrien tasked the comparer make this left arm, purely because be did not enrichly true the plantic twins that uscend it and partly because be wranted to protoci k from the cillular containers as much as possible. He folds the unifice of the ship for some oper where the electric charges on bias and adhere to a charge is of opposite names on the ship ball

Morrison found one that allowed him to keep his back on the ship. The electric field did not hold him tightly and there was considerable give. Still, he was the size of an atom and it might be difficult to concurrate electric charge on a portion of him.

Or would it be? Wouldn't the electrons that were the source of the charge be microminiansrized as well? He felt -- and resented keenly -- his ignorance of mini-

He was like aware of his motion along the intracellular musan, for everything was moving along with hims. He found kinnell, however, the conter of a shifting and ever-changing gauserman. With the thinner plastic of the walt between kinnell and the scene, with the bacard or his own uit turning heat ad there as he moved his head and fift the headpiece roise (a little roismant) with it, he could make out more.

There was the knowlesses of the water melocules reboling against each other, like dusty som hallooss. He could see them bands part hims dowly, this way or that, and largely ignore hims. Occasionally, one would cling for a moment, as decire, charge meeting an opposite duago on his wit, so that they clutched at him and relaxed their hold only inspringly. It was almost as thoogh a molecule

Among these were larger medicales, seme as large as the slip, seme far larger eff. He could see them only because light gliand off them have and there is changing, privately failed. If is did not we there, his mind half them up out of what he could glianges. That he could do this a sil was the result of his lassing a good deal about the contents of the cells of private. It has been the mind half them up out of what he could glianges. That he could do this a sil was the result of his lassing a good deal about the contents of the cells of private.

It rest seemed to Matrices that be could make out the skeleton of the cellular interior; the large structures that remained in place while the fluid emans passed than and that gave the cell is more or less fluid shape. These encurses seemed to go by so quickly be could burdy take note of them before they were gone. They alone gave him the improvise of the rapid movement of the intercellular structure. All this observation had not taken sure long, but it use encents it was time that he new turned his attention to his computer

Why? It would describe the second of it, but he couldn't act on that bulket, however strangly he fok it. He might he wrong, perhaps, and he owed it to the others - and to himself, too - to make the effort He tried classify to adjust the comparer to maximum sensitivity, harely able to handle the keys connectly and relieved that the self-contained power pack in the comparer worked properly. He concentrated hard in order to some and top the currents of thought passing by

The device did in work. The water molecules drifted by it as genty and unstackingly as they drifted by him and, discepting them, his compare pretryed the skept: waves mere parely stelad, more steep and ciar, more finally datalid, that he had over before seen them. But for all that, he sensed nothing but a faint blocking whipper that produced neither works nor images but only calends.

Wald! How did be know the whisper was saf? Samily that was merely a subjective judgment on his part. Or was he detecting an emotion? Was the partially brain-dead, study constous Shapirov saf? Would it be surpticing if he ward Merrien looked our his checkler, but at he halp, Saroly that he van descring was enough. He was regioneing out mething, more it a charact Wandt Konev net demand he yo ar apin

d if he waited longer

Actually, he could wait longer. At this stage of miniaturization for for whatever cause), he did not feel any particular heat.

instes, or five minutes, or an hoar, for that matter - Konev would still say, "Not enough He could make out Koney looking out toward him, his expression dark and eleverings. Kallinin was describ behind him, since she had unchased herself and moved ever into what had been Morrison's sear. She was staring outward anisoney

For the sake of completeness. Morrison tried to catch Durhney's evo. but the antice requised was too erour for the twistine ability of his headsize. He caught, instead, Koney motionion in what sourced, clearly, an interpretative events. Morrison looked away peniately, making no attempt to give information, and became aware of constituing in the distance looming toward him at a great speed. He could make out to details, but he automatically winced as he waited for the current to carry the ship and himself around it

It came straight on like a ter son cowered toward the hall of the ship

The shin did evade the object, but not by much and as the looming monster nessed him Morrison folt himself drawn outward and toward it. n had put some random electric charge on his suit and that whatever it was he was passing, by the most miseral

Under normal circumstance, that would not have numbered. The ship and the structure pooed each other at such a special data on attraction could have sufficient to ity object with archive mass nor instruit and, for a moment, he filt - struched - as though the structure and the ship dopated symmetry. The ship, it seemed to be applied symmetry failured and then was publical loss by the counter

Morrison had been peeled off by the object and the ship, still continuing with the current, moved off so rapidly that it was lost to sight at once. One second it was with him, the next second it was tonally gone. Before he had time to realize what had harmoned, he was alone and helpless - an atom-sized object in a brain cell. His only faint attachment to life and reality - the ship - was forever cone.

Some minutes must have been lost to Montion. During that time, he had no conception of where he was or of what had happened. He was conscious only of absolute partic, of the convicti When life continued, Morrison was almost surry. If that moment had been death, it would have been all over. Now he still had to wait for it.

How begy would be as her? Would has as her? Would has as handly served on, one of mon story than before, iscorably, just the same, phase. Would had is his to be in the light of age, east bein be data as would be have to de is more datacenses as well as would just with the property as a served, just with the phase data before and just before and to be in the light of age, east before be data as would just with the property as a served just before and just bef What to do, then?

What had some arrange amounte?

Ab, he was not yet dead. The fear had receded enough to allow room for a little curiosity -- and a will to fight and live

Could be somehow per loose from this thing? It seemed dispaceful, somehow, to de like a fly stack is anisher. - And every moment the ship was getting farther away. Almost at once he thought, if's already too far away for me to be caught, no matter

The thought drave him to fromy and Morrison writhed with all his might, trying to break loose. It did no good and it occurred to him that he was wasting energy and increasing the heat within the suit.

He slid his hands upward along the misry structure that held him, but his hands bounced away. Like charges repel each other He mached along in - right, left, up, down. Somewhere there was the opposite charge. He might be able to seize held then and try to tear the structure apart. (Why were his torch charming? Pright? Deeperation? Both?)

ed hand, trying to push past the mem charge and tear at the atomic arrangement itself - if there was any atomic arrangement that had meaning aside from the charge itself. For a moment. Moreison felt the structure reviet a too-test review with a kind of mibber reloand. And then, without warriane, is crambled in his hand. He stand in assumement at his hand, tryine to make out what had haronned. There was no statistic, creates, or warchine structure had simuly discretance had simuly discretance.

Morrison tried again, groping here and there, until another portion vanished. What was

Weit architel? The minimutation field counded beyond the ship districts. Becauses had usil, it weekl cound beyond the suit, toose of the atom is weakl and in the minit, come of the atom is weakling would minimute and, is to doins, it would loss its normal architecture and brack koos from the atoms to which it had formath been beaded. Arothine the twoched + it the count beyond the atom is to be atoms to be atom is the atom is to be atom is the atom is to be atom is the a Any atom or portion thereof that he minimized in this way would become a point-sized particle with the loss mass than an electron. It would take off at nearly the speed of light, pass through matter as though that matter warm't them, and be gone. Could this be so? It had to be so. Nothing else he could imagine would make sume.

And even as he thought this, Morrison began to pash his hands and feet violently against the imprisoning material -- and broke loose He was no longer gland to the structure. He was an independent body coursing along the intercellular struam.

It didn't store the shire from beine forever out of much, but he was at least on its mail. (Foolish! Foolish! What mood was it to be on its mail? On his own scale, he was datume of kilometers from the shire -- if not scores.)

Another thought struck him and staggored him. He had been minimuting anones to get free, but such minimutination required an input of mergy. Not much at this stage, since there was so little mass to remove, but where would the energy come from

It had to come from the suit's own minimurization field. Every atom that minimurized weakened the field, therefore. How much had he weakened it, then, by setting loow?

And was that why he wasn't feeling the hear? Had the minimutation of his surroundings soulded up some of the hear as well as of the energy of the minimutation field? No, that couldn't he so, for he hadn't fek much in the way of hear even before he began breaking losse. Yet another thought strack him, makine his resolution more demonstrate will. If he had broken loose from the expresse of the energy of his field - if his field had been wakened - then he would have deministrated dirithy. Was that the reasons for expresses demonstrate will.

Boranova had talked of the possibility of such spontaneous dominiaturization. The possibility of that increased, the smaller the miniaturized object was. - And he was now small At long as he had been on the ship, he had been put of the overall miniaturatization field of the ship. He was put of a molecule-sized object. While he was put of a providations of the cell, he was put of an even larger object. But now he was above, separate, put of nothing beyond himself. He was an atom-

He was much more likely, now, to dominiaturize spontaneously, except that it wouldn't be spontaneous - it would be the weakening of the field by the miniaturization of surrounding normal objects.

How could be still if he wave deministration? If he wave, the process would proceed at an exponential rate, He would be deministrationg dowly at first, but as the grew larger the would affect a larger volume of surrounding material and he would grow larger at a freet rate, and finally it would be deministrationg dowly at first, but as the grew larger the would affect a larger volume of surrounding material and he would grow larger at a freet rate, and finally it would be deministrationg dowly at first, but as the grew larger the would affect a larger volume of surrounding material and he would grow larger at a freet rate, and finally it would be deministrationg dowly at first, but as the grew larger the would affect a larger volume of surrounding material and he would grow larger at a freet rate.

But what dd it matter if he were deministrativing? If he were, there, is a brief time - seconds merely, at most - he would be dead and it would happen too quickly to make any improviou upon him. One moment he would be alwe and the next moment then would be nothingen

ow could be ask for a better death? Why should he want to know a second earlier that it was going to happen

Because he was alive and he was human - and wanting to know was what made an object alive and human.

How could be tell? Morrison stared at the dim glinting around him, at the moving swell of the water molecules, turning and shifting around him in a kind of slow motion as both he and they moved along the into

If he were increasing in size, they should seem to be decreasing, and vice versa.

iorrison stared. They were decreasing in size, getting smaller. Was this death? Or his i Wait, were the water molecules increasing in size? Swelling? Getting larger? Ballooning? If so, it must follow that he was getting smaller.

utomic particle? A subelectron? Would be go streaking off at the speed of light and explode when he was halfway to the moon, dying in a vacuum before he had time to know he was in a uld he shrink to the size of a subsu

No, the molecules were drinking, not expanding - Montison closed his eyes and took a deep breath. He was going mad. Or was he beginning to experience brain damage? Better to die, then. Better death altogether than a dead brain and living body. Think, Morrison, think. You're a scientist. Find an explanation. Why should they pulsate?

ik //Eloume/Dar/Shing-Fune-Official-large are Skiner/ane-Skiner/ane-Skiner/ane-Sking-SSESS-SSEnnadas/Skiner Be knew why de field night weike – its teakney to mitianzize de serrondings. Why should it sneughes?

But he -- Morrison, alone in the cell -- was much smaller, possessing less mass, and for him the energy inflow went far more into miniaturization than heat.

But these was not only the hear energy intensity of his body; these was also the energy of the miniamization field. And, as he was struck randomly by the water molecules, energy need not flow into him in the form of hear, but in the form of

Morrison's first clenched helpletoly. He let go of the company and didn't cam. Undershally, the others, Bonnova and Konev certainly, knew of this and might have explained it to him. Once again they let him go into danger without variant

And now that he had worked it out for himself - what good did it do him? He opened his eyes suddenly. Yes, there were palsations. Now that he know what to expect, he saw them. The water molecules were expanding and contracting is an irregular thythm as they give up energy to the field and then extracted energy from it. I Morrison watched it with a suspelled waying shythm and he found himself maturing soundletoly: "Larger, smaller, larger, small It could only get so large, he thought. The expansion mirrored his own contraction and there was only so much energy to be pushed int power that construction. The collidar contents had a semperature only so high. On the other hand, they could take large quantities of energy from him, and once they took enough, what was left would go more and more Therefore, when the water molecules contained in size (and be bimself was envoire smaller) be was out, if he want to decide contained to contract a day, hereit he was not out. If the water molecules contained to contract a day of the water molecules contained to contract a day. "Larger, smaller -- smaller -- stop contracting?" Morrison let his breath eo, for the moleculos were extrandine again. Over and over! Each time - would the contraction stop? It seemed to be playing with him and it didn't matter anyway. No matter if it brought him to the brink of destruction, then stratched him away, and if it did it a million times over, it would'be matter. Somer or hate, his air would be gone and he would die a slow, sufficiently dest Better a quick death, surely. Kallinin was screaming. She was the first to malize what had happened and she choked on her words. "He's gone! He's gone?" she shrieked. Boranova was unable to stop herself from asking the obvious question. "Who's gone?" Kallinin turned wide eyes on her and said, "Who's gone? How can you ask who's gone? Albert is gone Bernstein streed blockly out at the over where Merrison had been and new search. "What homemod?" Derhary mattered hoursely. 'The not sure. We cat a corner closely. Albert, attached to the osnide of the ship, introduced an asymmetry, perhaps. I tried to store the ship away from - from whatever it was, but it didn't respond properly.' "A fixed macromolecular organetie," said Koney, who looked up now after having baried his face in his hands, "scaped him off. We've got to get back to him. He may have the information we need." Branners by new darly indexended here in white a second branch with a space new real and out of the indexense of the maker second branch with a space second branch with a space second branch with a space se Konev said, "We're just argoing motivation. We both want him back. The reasons why an secondary "We should never have sent him out," said Kaliinin. "I knew it was wrong to do so "It is done," said Boranova graffly, "and we must proceed from that point. Arkady "Im tryine," said Dealmey, "Don't seach a drankard to biccup." 'Tm not trying to teach you anything, old fool. Tm ordering you. Turn around. Back! Back!' "No." said Dechney. "Let this old fool tell you that's ridicalous. Do you want me to make a U-turn and back the current? You want me to try to force my way unstraum?" Bozanova said, "If you just stand still, the stream will bring him to us." "He is affering to something. He will not be brought to us," said Deshney. "What we must do is turn to the other side of the dendrite and let the return stream carry as back." Bonanova pat both hands to her head and said, "I apologize for calling you as old fool, Arkady, but if we go back by the counterstream we'll miss him." "We have no choice," said Dezhnev. "We lack the energy to try to make our way against the stream we're Koney said, sounding a bit weary but reasonable. 'Lat Arkady do as he wishes, Natalya, We will not lose Albert. "How can you know that, Yuri?" "Because I can hear him. - Or, rather, sense him. - Or, rather, sense Shanirov's thoushts by way of his instrument, hare and uninsulated in the cell." There was a momentary silence. Boranova, clearly anonished, said, "Are you getting something?" "Of course. In that direction," said Koney, pointing, "You can tell the direction?" said Boranova. "How?" 'Trn not sure how. I just feel. It's in that direction Boranova said, "Arkady, do as you were planning." T an doing in pagadaess of whar you say, Natadu. You may be captuin, but I ann arrigence with doubt stating me in the face. What have I to low? As my old father woold up: If you are dauging from a rupe over an abyo, don't before statching as a coin that fails out of your pocket. — It would be bener if I had a rual steering mechanism than this system of trying to mansoore three off com Boranova had stopped linening. She peered into the darkness uselevely and said, "What is it you hear, Yuri? Shapirov's thoughts tell us -- what? fothing at the moment. It is just noise. Anguish." Kallinia matured, as though to herestl, "Do you suppose part of Shapiors's mind knows ha's in a coma? Do you suppose part of his mind feels trapped and is chanoring to per our? Like Albert - trapped? Like we carselyou - trapped? Berneva said shaply, "We are not trapped, Sophia. We can move. We will find Albert. We will get out of this body. Do you understand, Sophia?" She reached for the other woman's shoulders, her fingers degging deep Kallinin winced. 'Please. I understand Boranova turned to Koney. "Is that all you get? Anguish?" "But strongly." Then, carloady, staring at Boranova, "Do you sense nothing "Nothing at all." But it is so strong. Stronger than anything I felt when Albert was in the ship. It was right for him to move outside." "But can't you make out any actual thoughts? Words?" "Perhaps I am too far. Perhaps Albert hasn't got his machine properly focused. And yo Boranova shook her head decisively and elanced briefly at Kalimin, who said in a low voice (rabbine one shoulder). "I sense nothine, either," And from Deahney came a discontented, "I never get any of these mysterious messages." "You got Hawking." Albert suggested there might be different brain types as there are different blood types and that he and I might be of the same type. He may be right," said Konev. Boranova said, "From what direction does the sensation come now?" . "From there." This time Koney pointed much closer to the fore end of the ship. He said, "You are turning, arent you, Arkady?" "I am," said Deathers. "and Tin now fairly close to the doldrams between the two statams. I am planning to edge only slightly into the counterensum so that we head back, but not too exickly." "Good," said Boranova. "We don't want to miss him. -- Yuri, can you judge the intensity? Is it getting stronger?" "Yes, it is," Koney seemed a bit surprised, as though he had not porteed the rise in intensity until Boranova had mentioned it. "Is it imagination, do you think?" "It might be," said Konev. "We haven't really gotten any closer to him. We're just making a turn. It's almost as if he's approaching us." "Purhaps he's washed off whatever he adhered to or forced himself loose. In that case, the carrent would carry him to us, if we're forcing a turn and staying essentially in the same place." "Rethans" "Yuri," naid Binnows whemenity, "you jot concentration the sensation. Keep Aduady arease at all times of the direction from which it comes, which means you will have to be pointing owned Albert medity. - Arkady, as you get choser to Albert, you will have to tam toward the objinal generator again and generator it access to his position as possible. Then once we're moving together, it will be cauge to drift closer by use of our motor "Easy for one who's not controlling the motors," growled Dashne "Easy or difficult," said Bonnova, her formidable sysbrows hanching low, "do it. If not - No, there is no 'If not.' Do it." shnev's lips moved, but no sound came and silence fell upon the ship - except for the unheard flood of sensation that enter Koney remained standing, facing in the direction from which it seemed to him the sensation was coming. He matered once, "Definitely stronger." Then, after several moments, "It seems to me I can almost sense works. Maybe, if he comes close mough ---His expression grow even more strained, as though it ware trying to farce the unsorties, to crant kins be mind, while taking the noise apert and separating it into words. His finger keyr pointing tigidly and he stal finally, "Adady, begin carving back into the doldrams and he ready to plange into the original strans. — Quickly, Dorb let him pass use "As quickly as the motors will let me," said Derhney. Then, in a lower voice, "If I could maneuver this ship by the same magic with which the rest of you hear voices --" "Head straight for the membrane," said Koney, ignoring the remark. It was Kalinia who saw the spark of light first. 'There he is?' she cried out. 'That's the light of his suit.' "I don't have to see it," said Koney to Boranova. "The noise is like a volcanic eruption in Kamcharka." I noise, Yuri? No words?" "Frieht," said Koney, "incoherent frieht," Bonnova said, "If I were aware in any way of being trapped in a contatour body, it would be precisely how I would fiel. -- But how has he come to realize it now? Earlier we did make out work and even quiet and pace Durbney said, contine a little in the excitement of the chase, which had him unconviously holding his breach. 'It may be something wy've done with this ship. Wy've stirred on his brain.' We're too small," said Koney with contempt. "We can't even stir up this one cell noticeably." "We're coming up to Albert," said Dephney. "Sophia," said Boranova, "can you detect his electrical pattern Tainty Nation. "Well, throw everything you've ext into something complementary that will attract him tightly." "He seems a little large. Natalya." "He's oscillaring, I'm surs," said lloratova grimly. "Once you attach him to the ship, he'll become part of our general miniaturization field and his size will adjust. Quickly, Sophia." There was a slight bump as Morrison was electronically pulled against the side of the ship. CHAPTER 16 -- DEATH Once the sun sets, it grows dark; don't let that catch you by surprise. -- Deahney Senior Morrison could not have recall anything that took place -- either just before or just after his return to the dajs. Try as he might, he did not remember seeing the ship coming for him at any time, nor did he recall the moment of transfer, nor the removal of his placeic sait. Going far enough back, he remembered the despair and loneliness of waiting to explude and die. Going far enough forward, he reme thered looking up at the concerned face of Sophia Kaliinin bending over him. There was nothing in between Hadn't this happened already? The two incidents, joined by Kallinin's care for him, were separated by several hours in time, but melted into one. He said in a bearse and almost uninniligible voice, "Are we headed in the right direction?" He said it in English. Killistis hostand, that answered dowly, also in English and with a modurately heavy accest, "Yes, Albert, bet that was some time app, when we were in the capillary. Yos came back and then were out a second time. We are in a second time, We are in a second time. We Morrison frowned. What was all this? Slowly, in bits, his memory returned. He closed his eyes and triad to get it all straight. Then he said, "How did you find me?" He spoke in Russian now. Konev said, "I sensed -- quite strongly -- the thought waves of Shapirov as it came through your instrument." Konev said, "It was still attached to you. Did you make out actual thoughts?" ctual thoughts?" Morrison stared at him fuzzily. "What actual thoughts? What are you talking about?" Koney was clearly immained, but he set his list tightly together and then said. 'I could make our Shariny's thought ways traching me across the cell by way of your device, but there were no acrual words or immers "What did you sense, then? Re: F.Donmerst-Dinal-Offening-Prince-Official-Dealey-Land-Meisser-Famorie-Diffequent-Silver-Prince-Official-Silver-Silve

What about the surrounding molecules? They had more random hast energy per volumes than be had because they were at a higher temperature. Outliantly, hear should fire from the surroundings into his suit and be kined? would be at blood temperature and be would de of his cover inhibity to rid himself of the heart be had accumulated, as he almost had on his easter years consiste the ship.

This must be true at all times when a minimated object was summanded by normal objects of higher tangentums. The energy might five from the unstantived object other as heat or as field intensity. And it must be that the smaller the object, the more it must be field that gained the energy and not the object instit.

which the ship, nos, was painting, growing larger and smaller constanty, but to an extern not great enough to noise. Still, that was vely the Brownian motion hadrit increased as far as it might have and that was vely the air-conditioning could perform its function with loss strain. The miniamization field

arization activation. The field would grow more intense and he would shrink.

. Benances said, "The rest of us sensed nothing at all, but it seemed to us that what Yari described was the anguish of a mind that knew it was in a commone map, that knew it was a prisoner. Did you sense anything "No." Morrison looked down upon himself and realized that he was sprawled across two sears, his head was in the crock of Kaliliais's arms, and that he was in his one-piece conton suit. He tried to energies upright. "Water, pieces: He drask thirtelly, then said, 'I don't recall hearing anything or sensing anything. In my position --' Koney said sharply, "What has your position to do with it? Your computer was transmitting information. I sensed it at a considerable distance. How would it be possible for you not to sense anything? Thad other things to think about, Yuri. I was lost and I was sure of death. Under the circumstances, I paid no attention to anything else." "I cash believe that, Albert, Don't lie to me." "I am not lying to you. -- Madame Boranova." He managed to pron ce the name very formally. 'I demand that I be treated in a coarteous manner.' "Yuri," said Boranova sharely. "Don't make accurations. If you have questions to ask, ask them," Knew vaid, "Then let no put it this way. I sunsed a grout dual of exection, even through I was far from the instrument in sums of our minizantined state. You, Albert, wen right on top of your device and it was layed to your built, not mine. Our builts are of similar type, presentably, but they are not identical and you can sense on e sharely than I can. How is it possible, then, that I could sense so much and that you should nev Morrison said stremously, "Do you think I had time or inclination for sansing? I was overt away from the ship. I was separated, alone, lost." 'I understand that, but you need make no special effort to sense. The sensations would invade your mind despite anything that might be taking place." Treases of no sensations just the same. What Hild my mind was that I was also and I was going to die. How is it possible you don't anderstand that? It thought I would heat up and die, as I almost did the first time." A studied doubt assailed him and he looked across at Kalinia. "Then were two tim "Yes, Albert," she said softly, *And then I malized I wan't heating up. Instead, it seemed to me that I was growing larger and smaller -- oscillating. I was involved in some sort of miniatration transfer in place of heat transfer. Is that possible, Nandyat? Bounova hesitand, then said. "That effect follows naturally from the field equations of minianarization. It has never been tested, but assumptive you confirmed it while out there." To seemed to me that may summanifying were oscillating in size, that the water molecules all around net wave expanding and contracting, and it seemed to me to be more logical that it was I who was oscillating, rather than that everything doe was "You were correct and what you report is valuable. One might argue from this that the turneal of the event to you was not without its compensation in a larger sense." Koney said indignantly, "Albert, you tell us that you were perfectly capable of careful and rational thought out them - and yet you expect us to believe that you sensed nothing? Merries rated by vice, "Carly you understand, you mesonanise, that it was this very careful and rational though, as you call it, that filled my mind to the exclusion of verything else? It was in absolve terror. I supected, with each contraction of the molecules around me, that com on and explode and die. I was not in the lasst concerned with sensing thought waves at that moment. If any had forced themselves on ms, I would, in my condition then, have ignored them. That is the traff Koney resisted his face into an expression of score." If I had an important job to do and if a firing squad had their weapons trained on me, then in the few moments before they fired, I would still concentrate on my job." Durhney mattered, "As my father used to say: 'Anyone can hant a buar fearlessly when the buar is absent." Koney turned on him fiercely, 'Twe had enough of your father, you old drankard." Denharv said, "Repeat that to me when we are safely back in the Grono and you will then find you are hunting the bear when the bear is present." Boranova said, "Not another word, Yuri. Are you intent on quarteling with everyone?" "Natalya, I'm intent on doing my job. Albert must go out again." "No," said Morrison in terror. "Never." Denhney, who glared at Koney less than lovingly, said, "A hero of the Soviet Union is heard from. He must do his job, so Albert must go out into the cell again." Boranova said, "Dezhnev is right, Yari. You boast that even a firing separad would not interrupt your daty. Go out once, then, as Albert has done twice Koney said, "It is his machine. It is keyed to his brain." "So I understand," said Bozzarosa, "but you, as you yoarself oup, have the same brain type. At least you could same what he samed. Cartainly you sensed the skeptic waves when he was lost in the instructibute current. And you were at a distance. With the machine in your very hand a contride, you would gather data of your own, which should be more valuable to us, in any case. Of what use would it be to have Albert's keener perception if you insist on disbelieving whatever he says' All were staring at Koney now. Even Kaliinin managed to look at him at intervals through her long lashes. Then Morrison coughed slightly and said, 'I'm afraid I urinated into the suit. A little. Not much, I think: Terror has its price "I know." said Boranova. "Twe drained is and cleaned is as well as I could. That shouldn't usee Yari. A listle bit of urine residue will supely not use the dedication to dury of a man like him." Knew vaid, "I never this chansy accurse on the part of all of yos, but FE go out into the cell. Do you vally think Fin afraid of doing that? My only thought to the contracty has been that Abert is the bost neceiver. Still, I an second-bost, certainly, and if he will not do it, then I will, provided -He passed and Dezhney said. "Provided the bear is not them, eb. Yuri, my here." Koney said bitterly, "No, old set, provided that I are held firmly to the ship. Albert was tree loose because he was attached feebby, a poor job on the part of the one in charge of that department. I want no poor jobs done on me." Kallisis usid to one, her open on the flagerity, "Albert must have evends a stracture in such a way as to searchy fit i, electricity quarking. The chance of that happening was very low. Does or, I shift by to make use of an old pattern on the ship and the sait is order to reduce the solds as fir as I can Koney nodded. 'TH accert that,' he said to Bonneya. Then, to Morrison, 'You say there is no heat transfer?' Morrison said, "None that I could detect. Just size oscillation." "Then I won't bother removing my earment." Boranova said, "You understand, Yuri, that you won't stay out long. We cannot stretch the risk of deminiaturization indefinitely." "I understand," said Koney and with Montison's help he clambered into the suit. Morrison looked through the hull of the ship and watched Kone Twice it had been the other way around. He had been outside looking in. (And for a while, that second time, he had been nowhere looking newhere.) Merrison fa 1 lith: chaptined that Know vormed or composed. Know dd net turn to look into the ship. Ha held Merrison's compares in lish hands, fellowing Merrison's havy instructions on the demanantary aspects of expanding and facesing. He somed enterity intent on bio jub. Was he milly that will brave? Would be continue to executivate even if he wave ripped loses as Merrison had been? Probably — and Merrison fat as He looked at the others on the ship. Durhney remained at his controls. He had to stay near the me trane of the cell. He had suggested moving into the doldran herven the two struams. Namly motivales as they would then be (probably turning in a slow eddy, actually), they would not risk the kind of accident that had scen Marrison loose. Knew had without dhat at once. It was along the membrane that the skaptic waves moved and he wanted to be near them Durhave had also suggested turning the ship spoke down. Up and down made to difference here in the cell, any more than it did in come space. By turning updels down, the air lock would be on the side of the ship away from the membrane and that might keep Koney away from cytoskaland structures That merely angened Koney. He pointed out that such structures might be anywhere in the cell and that, in any case, he did not want the bulk of the ship between himself and the membrane So he was out them, in just the way he wanted, and Deahney, paying close attention to his controls, whielled very softly to himsel Bonnova watched her instrument, looking up only occasionally to gaze thoughtfully at Konzv. Kalianin was fidgery: It was the only word. Her eyes shifted toward Konzv a hundred times and they shifted away as many times. Boranova said suddenly, "Albert, it's your instrument. Do you think Yuri can work it? Do you think he's getting anything? Morrison smiled briefly. "I preset it for him. There isn't much further for him to do and I explained the focusing, lust the same, I know he isn't getting anything, Natalya." How can you know that?" "If he were to some somethins. I would overhear it - or oversense it, perhans I should say - as he oversensed me when I was out in the stream. I sense nothins: absolutely nothins." Bonneya looked surprised. "But could that be? If he sensed something when you held it, why shouldn't he sense something when he holds it?" Perham condition have channed. Consider that all this access that Koney save he detected when he followed my machine's broadcast of Shanicos's thoughts to me. That was not characteristic of what we band before." "I know. It had been almost idyflic before. Green fields. Mathematical equations." "Can it be, then, that the living mart of Shaniovy's brain. If it is canable of consciousness, has just meenfly recomized in contatone monition, that it has done so in the last boar, restants ---"Why should that have happened in the last hear? That's too much of a coincidence that it should do so now, just as we are in the brain." They we have set in the set of th Boranova looked uncertain. "I still can't believe that. Do you really think Yuri's not setting anything?" "Nothing of any significance. I am quite certain." "Perhars I should call him in." "I would if I were you, Natalya. He's been out nearly ten minutes. If he isn't getting anything, that's time enough." 'But what if he's getting something ${\ensuremath{\mathcal{T}}}$ "Then he'll refuse to come in. You know Koney. Boranova said, "Tap on the hall of the ship, Albert. You're nearest his face." Morrison did so and Koney looked in their direction. His face was blarred through the plastic headpiece but he wore an unmistakable forwar. Boranova gestured for him to come in. Konev hesitated, then nodded, and Morrison said to Boranova, "There's your proof." Koney was brought in and they could see his face was flushed. They unbuckled his helmst and he drew in a deep breath. Where? That's good. It was getting a little warm out there. Since I was attached to the ship, the size oscillation us low than I expected and the heat transfer was perceptible. -- Help me get the rest of th Bernessa said in a sudden small steam of hone. "Is that adve you were made to come in? The hear?" "That was certainly the chief reason." "Did you sense anything, Yuri?" And Koney scowled and said, "No. Not a thing. Nothing." Morrison lifted his head. A muscle in his right check twitched briefly, but he did not smile. "Well, Natasha, little captain," said Dashnev with an air of faded boshomio. "What do we do next? Any ideae?" He received no answer. In fact, no one seemed to notice that he had spoken. Koney was still mopping away at his chost and at the back of his neck. His look at Morrison had no bothomie in it at all. His dark eyes smoldend. "There was a great deal of transmission out there when you were consider the ship. "If you say so," said Morrison coldly. "but I told you that I don't remember a thine about is." "Maybe it does make a difference who holds the device." "I don't believe that." "Science is not a matter of bullet, but of evidence. Why don't we see what happens when you go out holding your own device exactly as I dd? We'll have you bound fittedy so that you don't come loose again and you can stay out the same ten minutes I did. No more. Morrison said. 'I won't do it. That's already been tried.' "And I sensed Shanirov's thoughts - even if you say you didn's." "You did not sense his thoughts. You sensed only emotion. There were no words "Because you let go of the device. You admitted that yourself. Try it now, without letting go." "No. It won't work." 'You were distanted because you were tern loose. This time you will not be tern loose, as I was not. You will not be frishnaned." "You underestimate my capacity for tarror, Yuri," said Morrison, shragging. Koney looked dismuted. To this a time to inke?" 'Tm not joking. I'm easily terrified. I lack your -- whatever. "Coarage?" "All right. If you want an admission I lack courage, I'll admit it." Koney turned to look at Boranova. "Natalya. You are the captain. Direct Albert to try once more." Toto't think I can direct him under these conditions," said Boranova. "As he himself has said, what good will it do if we combine our strength, force him into the sait, and shove him out? M he is inceptable of doing anything, will get nothing out of it. However, I can ask him. - Alben." "Save your breath," said Morrison wearily "Once more. Not more than three minutes he the clock others you set a "We won't I'm convinced we won't Then only three minutes to prove the point Merrien sak, To that ad, Nathy? I'l ge arhing, Yai vil uy lan delberarb pindpoing my compare. If here is no not between us, we will accomplete action of a del de sense a grant dail. Woo des dd? Did yu, Nathy? "No. I sensed nothing." "Sophia?"

, Derhnev said in an aggrieved tone, "I do not seem to be able to sense very much."

Kaffinin shook her head. "Adkady?" Br - E. Downey, A. Jan S. Merson, Prince S. 2004 (e). Dester har S. 2014 (e). Function 301 (c). arXiV: 2014.1011 (c).

Merrison said, "Well, then, Yari stands alone. How are we to know he scally sensed anything? I shall not be as unkind as he is. I shall not access him of lying - but in this possible that his wild desire to sense something caused him to imagine he had Koney's face was white with anger, but his voice, except for a slight transer, was cool enough. 'Torget all that. We have spent hours in this body and I'm asking for one has rvation, one last experiment, that may justify all that has gone

"No," said Morrison. "Last pays all. I've heard that before." Boranova said, "Albert, this time there will be no mistake. One i

Durhney said, "It would have to be a last experiment. Our power supply is lower than I would like it to be. Finding you was costly, Albert."

"Yet we did find yes," said Kesere," and without counting the cost. If found yes, "He staddardy smalled tightly and finerely, "And I woulds't have from dy use if I did not detect the transmissions emanating from your device. It would have been impossible. There's the proof that what I sensed was not imaginary. And since I found yes, pay ne back

Metrical's neutrile flared. "You came after me because my explosion would have killed you ill in a matter of minutes, pethans. What payment do you expect for your anxiety to save your own it-

The ship rocked violently without warning. It swayed heavily and Konev, who had been standing, tortered and caught at the back of his seat. "What was it?" called out Boranova, checking with one hand at her own control device.

Kallinin bent over her computer. 'I caught a glimpse, but you can't tell in this light. It may have been a thosense "A ribosome." repeated Morrison in actori

"Why not? They're scattered all over the cell. They're the postein-manufacturing organelles."

"I know what they are," said Mor

"So it landed us a blow. Or neher, as we skimmed alone, we landed it a blow. It doew? matter which way you look at it, we just had a eight piece of Brownian motion."

"Worse than that," said Deshney, pointing outward in horor. "We're not getting heat transfer, we're getting field oscillation."

Morrison, staring in destrair, recomined the phenomenon he had seen when along in the cell. The water molecules were expanding and contracting -- visibly so. "Stop it! Stop it!" shoated Koney.

The trying to," said Boranova through tight lips. "Arkady, shar off the jot and make all the power available to me. -- Shar off the air-conditioning, lights, everything?"

Bozanova bent over the tiny glow that marked her battery-powered computer

Morelean could use nothing except for the light from Encourse's composer and, in the war next to him, Kalinishi. He could not see, in the otherwise total darkness of a cell buried in the interior of a brain, the ware molecules overling and unbid There was no uncertainty about it, however. He could feel the jurning in the pit of his stemach. It was not the water molecules that ware occiliaring, after all. It was the minimumization field that was - and the objects that were buried in it - and he himself.

Each time the ship expanded (and the water molecules seemed to contract), the field converted some of its energy to heat and he could feel the flowh that evept over him. Then, as Boranova fe

But then they began to grave wilder and be knew that Bornarou was failing. She could not feed off the openaneous deministration that was on the way and, is two seconds, be knew he would be dead. He -- and all of them, and the body in which they were buried -- would be an exploring part of water vapor and carbon disolide He felt dizty. He was going to faint and, in his pacifianimous way, he would thus anticipate duath by a second and his last recognizable emotion would be one of intense share.

The seconds passed and Morrison didn't faint. He stimule a little. He should be dead by now, shouldn't ha? (it was inevitable that the next thought should come: Can there be an attentify after all? - He dismissed the possibility quickly.)

He was aware of someone sobbing. No! It was hards brea

He opened bic open (be hady) mailed they wave cloud) and famal finantife earing at Källnin in the dim light. Since all the energy available was being gamped into the effort to keep the ship from demaintanting, be save her only by the glow of her own company. He could make out her head best over it, her hair in distances and her beauth whiching sharphy through her parend lip.

f hope and thought and life. The ship's oscillations see And then cautionsly, Kaliinin stopped and looked up sidewise at him, her face twitching into a painful smile. "It is done," she said in a hearse whieper.

The light within the ship brightened shows, shows turnershop, and Dachney utered a large shalkking sigh. "If I am set dual new," is said. Thege to live yet a little while As on y future cost said." Lift would be asbearable if duals were set were yet. "- Thank yes, Nataba. Yes may be say captule favore."

"Not L" said Boranova, her face looking very old - to the noise whene Morrison would not have been surprised to say white strucks in her black hair. "I simply couldn't pump encenth energy into the skin. Was it something you did. Somhar" Kallinin's eyes were cloud now, but her brases were still heaving. She stirred a little, as though relactant to answer, relactant to do anything but saver life for a time. Then she said, 'I don't know. Maybe.'

Boranova said. "What did you do?"

Kaliain said, "Levelich just wait for doub.1 made the bilt the electric deplicate of a D-placose molecule and hoped the cell would do the somed thing and insurer with a molecule of ATP -- admosine triphosphare. In doing so, it gained a phosphare group and energy. The energy, I hoped, would go into miniforcing the mini if I were hitting the right keys or not - but I must have. And the ship a te ship and the phosphate group fell off. D-placose again, another gain merry, then neutral, and so on, over and over." She stormed to mant a bit. "Over and over. My fineers were y

Boranova said. "How did you come to do that? No one has ever successed in my hearing that this might --"

Nor in time, "aid Kalinin. Nor in time I way be vondering this serving be downey of the ATP vield word. This service wands of the thip, and lines a time of the thip, and and you be analyy be a contact the distance of the ATP vield word of the thip and lines a time of the thip, and lines a time of the thip, and lines a time of the thip, and lines a time of the thip word and you be analyy be the thip word i the thip and lines a time of the thip, and lines a time of the thip, and lines a time of the thip word and you be analyy be a contact the distance attraction. It was all word a time of the thip and lines a time of the thip, and lines a time of the thip and lines attraction. It was all word a time of the thip and lines attraction the thip and attraction the the analysis of the thip and lines attraction. It was all word a time of the thip and lines attraction the thip and the thip and lines attraction the thip and lines attraction. It was all word attraction the thip and lines attraction the the thip and lines attraction the the thip and lines attraction the thip and lines attraction the thip and lines attraction the the thip and lines attraction the thip and lines attraction the thip and lines attraction the thip and

Durbary said - withy, about as though to kined." As any old father would up: If you have nothing to lose, gamble finds/" Thes, brickly, he said, "Thank yee, linds Sephia. My life is your from new or. It will give it is your a your and. I will go father. Will even many you if har would write you as convenient." "A chivalross offer," said Kaliain, smiller fairefy, "but I wouldn't ask marriage of you. Your more life - at need - would be onite enough,"

Bozanova was entirely herself now and she said, "This will be cited in detail in the final report. Your quick thinking and your quick action saved everything

Morrison coulds's must himself to make any encode at all. (Unaccountably, he folt near usaw, - he enzitized for Kalizaia's All be could do van such for Kalizaia's hand, mui it to his law, and kim it. Then, after cleaster his threat vieweeshy, he uid with extraordinary militaess. "Thank you, Scobia's

She looked embarrassed, het did not draw her hand away immediately. She said, "It might not have worked. I didn't think it would work.

of wildly for Koney, grabbing his shoulder. "She invested the technique that saved us. And in doing so, she saved your life, you idiot. She's the reason you're will alive. You can at he

"Had it not." said Dechney. "we would be no deader."

Through all this, only Yuri Konev had not said a word and Morrison turned to look at him. He sat as he usually sat, very spright and very much turned away from them. Morrison, finding his voice suddenly -- and his anger -- said, "Well, Yuri, what have you to say

Koney looked over his shoulder briefly and said, "Nothing,"

"Nothing? Sophia saved the expedition

Koney shrugged, "She did her job." fer job? She did much more than her job." Morrison lean

'TII do as I please," said Koney, twitching his shoulder and then writhing out of Morrison's grasp.

Morrison's hands found their way around Konev's throat. "You miserable, sporticical batharian," he granted out, squeezing despensibly. "You love her in your own incane way and you work give her a kind word, you piece of dir."

Again Koney pulled himself loose and then the two were parameling each other chansely. They were half-trapped by the seats from which they had partly from and neither could maneuver preparty under zero-gravity condition

Kallinin screamed, "Don't hust him?" mightily. He had not been engaged in this kind of physical combat since he was sizuen and, he thought in embarrassment, he wasn't doing any better now

He won't hart me, thought Morrison, stri

Boranova's voice rang out sharply. "Stop it. Both of you."

d they did. Both of them.

Beranova said. "Albert, you are not here to teach anyone manners. And Yuri, you need not labor to be a boor, it comes natural to you. If you do not with to acknowledge Sonhaix--

Sophia said with an obvious effort, "Im not asking for thanks - from anyone."

Thanks?" uid Know anesh." Tat to all use hanks. Before the deministration status of two events to ere this American coveral to thank in recording than to deve the factor of a dance floor. We needed how and curve. I seared him to dow his thanks by rettine out thank and trains to some some of Statistics' thoughts. Be referred Who is to to such and how to of thanks in recording than to dow the factor of the second to be and and the second to be and than to dow the factor of the second to be and than to be and than

Morrison said, "I said before the dominiaturization that I wouldn't do it and I repeat that now.

Detervisioning and said, We bear a dual break hear. We have consumed or energy supply as though it were volds as a welding. Between parents and deministrations, we have very life to spare for the task of deministrating under controlled conditions. We many get on non-

Konev said, "It would take very little energy to have this man go out for a couple of minutes and come in again. Then we can leave.

For a moment, Koney and Morrison stand at each other horsilely and then Dorbney said in a voice that seemed drained of some of its life, 'My poor old father used to say: The most frightening phrase in the Rassian language is 'That's old.' Koney turned anetily and said. "Shut up. Arkady."

Durhney replied, 'I mentioned that only because it is now time for me to say it: That's odd."

Boranova pushed her dark hair back from her forehead (a bit wearly, Morrison thought, and noted the hair itself was clearly damp with perspiration). She said, "What is odd, Ashady? Let us not play games." "The current flow of the collision material is slowing."

There was a brief silence, then Boranova said, 'How can you tall'

Derhney said heavily, "Natasha, dear, if you sat in my seat you would know that there are fibers criss-crossing the cell --"

"The cytoskeleton," put in Morrison.

That, you, Alter, ory dalk, "ad Dathew with synad wave of lie hand. "My taker sould us og: "his news indeparts vicks" or devises," Alter cost data (See a vick). The sound wave for and data (See a vick) are sound at the sound wave for a vick data (See a vick). The sound wave for a vick data (See a vick).

Kallinin said in a small voice, 'I think we have damaged the cell.' She sounded conscience-stricken.

nton took it to and and. Took bails clip game, new or low, worth hard Rapping is any way, especially in the condition he's in 1 would be be reprind if the clip way game, though. After all, the ship came after raw is a ferron raw, I language - and I thank you all gains for the - and a probabily offstand inself wardy to damb and more have vibrated the enter call as wait." Know and function dotty. "Durit and Webs reductionized - and a small reduction to Da you convex anothing we can do whether mexica or likeling is asing to during an entry call?"

Morrison said, "We don't have to reason it out, Yari. It's an observed fact. The intracellular stream is stopping and that ion't normal

"In the first place, that's just Adcady's improvion," said Koney, "and he's no neurologist --"

"Do I have to be a neurologist to have eyes?" domanded Dechnev horly, one arm mixed as though to strike at the younger man. Knew cast a brid gine at Darher, her made no other adamviologoust of his smark. He said, "And busides, we duri know that is normal in a living brain cell from this level of observation. There may be calms and addiss in the flow, to that even if something like this is observed, it might be only sumperay.

"You're whisting past the graveyard, Yari," said Morrison. "The fact is, we can't use this cell any more and we don't have sufficient remaining energy to wander around searching for another cell."

Konev ground his teeth. "These must be something we can do. We can't give up."

Morrison said. "Natalya, make the decision. Is there any point in investigating this cell any further? And are we in a position to seek out another cell?"

Benneve neised ber hand and howed her hand in a moment of thought. The others numed to look at her and Kaney seized the opportunity to graup Morrison by the upper am and pull line closer, line syste were dark with hostlity, He whippend, "Here is it you think I am is how with -' he jekted line hand in Kalinitri direction. "What gives you the right to think with 'I till Morrison looked at him blankly.

At this point, Boranova spoke, but it was not to answer Morrison's question. She said mildly, "Arkady, what is it you are doing?" Derhney, who was bent over his controls, lifted his head. "I am rearranging the wiring back to what it was. I am hooking up communications again

Boranova said, "Have I told you to do that?

Durhney said. "Necessity has told me to do that."

Koney said. "Does it occur to you it will be improvible to steer?"

Derheev growled and sa n sullen irony, "And does it occur to you that there may be no more staering to do?" "What is the necessity that drives you. Advady?" said Boraneya nationfly.

Durhney said, "I don't think it's this cell alone that is out of order. The temperature around us is going down. -- Slowly."

Koney speered. "By your measurements?"

'No. By the ship's measurements. By the backgrou

"You can't tell anything by that," said Koney. "At our size, we get very few infrared photons. The level would vary all over the lot." Depherer nodded at Konev and said, "Like this." His hand waved up and down fremetically. "Still, is can wave up and down like a rowbeat in a typhoon and yet do so at a lower and lower average level." And his hand wave over lower as it contin

Boranova said, "Why should the temperature be dropping?"

Morrison smiled grintly, 'Come on, Natalya. I think you know why. I know that Yari knows why. Arkady must find out and for that reason necessity is forcing him to pat back communications'

uncomfortable silence fell, except for Deahney's occasional grants and mattered explotives as he straggled with the ship's wiring. Merries gaid on a the surrentings, which he could need again see in the senal modefactory balance or that high lighting had been reserved. There were the senal dim gibre of melecular, large and small, that traveled with them. New that Dechney had merrissed it, be are the secand and reflection of light from a line that employ had been reserved.

These were, underbacky, very thin collagen fibers that preserved the shape of the irregular neuron and kept it from converting itself into a roughly spherical blob under the pail of its own surface tension. Had he been watching for it, he would ha to him that Dezhnev, as navigator, had to watch for everything and, in the entirely unprecedented situation in which the ship found itself, Dea

Certainly, to Morrison himself, Dezhnev had been taken for granted as the least of the five. Not fair, Morrison thought now. Deshney had straightened up now. He had an earphone in one ear canal and said, "I should be able to establish communication." He said, "Are you there? Grotto. --Grotto."

Then he smiled. "Yes. We are, to this point, safe. - Tin sorry, but as I hold yes, it was either communicate or state. - How is it at your end? - What? Repeat that, more slowly. - Yes, I thought so. He turned to the others. "Contrades," he said, "Academician Pyor Leonovich Shapirov is dead. Thirteen minutes ago, all vital signs caused and our task now is to have the body.

CHAPTER 17 -- EXIT If trouble were as easy to get out of as into -- life would be one sweet song. Re - E. Durannes-Jihark-Menian Princes-Mileliah Dedambaars. 26 jane Panasis-320 yaars-310-51. 520 yaars-310-51

A gray silence fell over the ship.

Kallinin buried her face in her hands and then, after a long moment, broke the silence by whispering, "Are you ware, Arkady"

And Dordney, blinking hard to hold back tuars, usid, "An I sure? The man has been on the brink of death for weeks. The cellular flow is dowing, the temperature in falling, and the Gents, which has him wind with every instrument ever invented, says he is dead. What is there to be ber sure? ranova sighed. 'Poor Shapirov. He deserved a bett Koney said, "He might have held out another hour." Bozanova said with a frown, "He did not pick and choose, Yari Morrison for childs. Until new he had been conceises of some surroundine rod corruscies, of a specific speck of intercellular review, of the interior of a neuron. His environment had been circumsethed to the immediate. Now he looked out of the ship, through its transparent plastic walls, at what appeared to him, for the first time, to be thickness upon blickness of matter. On their present scale, with the ship the size of a glacose molecule and himself no ch more than the size of an atom, the body of Shapirov was larger than the planet Earth Here he was, then, build in a sharetary object of dand ormatic matter. He folt imparience over the mass for meaning. Time for that hare, but meanwhile - He vail in a voice that was vertares a little loader than it could to have been. "How do we set out?" Bonaneva looked at him in surprise, eyes widening. (Morrison was certain that in her grief for Shapirov the thought of leaving had been momentarily buried.) She cleared her throat and made a visible effort to be her usual businesslike self. She said, "We must deminiaturize to some extent, to begin with." Morrison said, "Why only to bugin with? Why not deministrative all the way to normality right new?" Then, as though to freevail the inevitable objection, "We will inflict damage on Shapirov's body, but it is a dead body and we are still allow. Our needs come first." Kaliinin looked at More sachtlafly. "Even a dead body deserves respect, Albert, especially the dead body of a great scientist like Academician Pyore Shapiro-"Yes, but surely not to the ensure of riskine five lows." Morrison's immationae was enswine. Sharirov was only someone he had known by distant remarkion and peritherally - to Morrison he was not the demired he sound to be to the others. Durhner said, "Aside from the question of respect, we are enclosed by Shapirov's cranium. If we expand to fill that cranium and then up to cramble the cranium by the effect of our minimutization field, we will lose too much energy and demini e explosively. We must first find our way out of the cranium Benzeva usid. "Aftern is right, Lefv berin, I will deministrative to cell size. Arkady, have the receile in the Groto determine our exact rotation. Yusi, make sure you locate that position accumptly on your combrements." Merrison stared out the hull at the distant cell membrane - a brighter and more cominsous sparkle, one that was visible through the occasional flicker of light from the intervening melecules. The first indication of dominiaturization was the fact that the molecules - subsided. (It was the only word Morrison could think of to describe what happ It was as though the little curved eventings that filled the space around them - and which Montson's brain constructed out of veinkings rather than sure directly - shrank. It was for all the world as though they were hallocore with the air being lot out of them surel the surroundings seemed relatively smooth. But even as the liquid around them gave smooth, the large macroscolecules in the distance - the proteins, the machic acids, the still larger cellular structures - also shrank and, in doing so, grow more distact. The sparks of light they reflected www.more.dossly-spaced. The cell membrane insife semand to be approaching and is, too, could be sem more clearly. It came closer will and yet closer. The ship was, after all, is a narrow dendrits that projected from the cell body itself and if the ship was going to manys to the size of a cell, it would have to grow much larger than this more projection. It was clear that the membrane was going to collide with the ship and Morrison automatically clenched his toeth and seeled himself for the shock of impact There was none. The membrane cause closer and doese and here early be sported and was not here. It was to be fully bound to without de consequences of being forced into a minimization field. Though the day was deminimization for fat, for enable was devised and and the consequences of being forced into a minimization field. Though the day was deminimization field. Morrison watched everything after that with factuation. The surroundings usered charactic surfit, as objects continued to detail, be bogan to recognize the intervehilder jungle of collagon that they had encountend before ensempting the sources. That jungle continued to detail, in its turn, surfit the collegen tranks and cables because nothing more than trete. Bernesen mid. "And that is all. We will sear to be able to fe within a small usin." Derhney grunted. "That is all under any circumstances. Our remaining energy supply is not great. Boranova said, "It will last until we find our way out of the cranium, surely Durhney said, "We can hope so. However, you're only the captain of the ship, Natasha; you are not the captain of the laws of thermodynamics." anova shook her head as though in reproof and said, "Arkady, have them determine our position -- and don't lecture m Koner caid, "In contai, Natelya, that is not torribly important to determine our position. It cannot be measurably different from what it was when we left the capillary. All our wankerings eince have memly taken us to a nontry means and from that to a nontryburge possite. The difference in position on even an ordinary microscopic scale is scaredy me d then, after a wait of several minutes, the position came through and Konev said, "As I told you." Merrison said. "What's the rood of the position. Yes? We don't know which way we're headed and we can only so in whatever direction that might be. Now that communications are rootend, we can't neer." Konev said, "Well, then, since there is only one way in which we can head, we will head in that direction. Its sure that Arkady's father had a saying concerning that " Deathery said at once. "He used to say: "When only one course of action is possible, there is no difficulty in deciding what to do." "You see?" said Koney. "And we will find that whatever direction we go in, we will find a way out. Move ahead, Arkady." The ship moved forward, ploagets the new facelle threads of collasen, solubling threads a neuron, and curting across a this axon. If was hard to believe they were recently inside one of those axons and that it had seemed like a his/way a human li Morrison said dryly, "Suppose that Shapirov was still alive when it became necessary for us to leave his body. What would we have done?" "What do you mean?" said Bo Boranova said, "Well -- yes." "Where, then, is the respect for a living body? After all, we actually hesitated to violate the integrity of a dead one." "You must addressed, Albert, ther this is an empropre spectra with an indexpace ship. We have so choice. Add, is any case, it is an like system engenciably by the brain, enabling the crasium and lawing Shapitve bandles. Our present courses, our If Shapitve van allow, would derive y a down somess - or possibly a handsol - and that would not have be think you must addressed by the brain and analyze spectra with an indexpace ship. We have so a choice. Add, is any case, it is an like system engenciably by the throughout 126 - allow or and state state ship to be throughout 126 - allow or and state state ship to be the brain and state "Not quite," said Morrison grimly. "Red corpuscles are continually replaced. Neurons never are." Koney intempted, his voice rather load, as though he were impatiently overriding the idle talk of others. "Arkady, stop. We need another position determination. ments being made in the Grotto or might hamper the concentration of those making the mea There was at once a dead silence within the ship, one that continued -- as though any speech might interfere with the Finally Dezhnev whispered the measurements to Konev, who said, "Confirm them, Adsady. Make sure you have them right." Morrison anchasped himself. He was still virtually without mass, but them was distinctly more of it than them had been when they were manarvering within the cell. He palled himself cautionaly aprend, so that he There were two red spors on it, with a thin red line connecting them. The map displayed on the screen condensed a bit, the two dots shrinking toward each other, and then it expanded again in a different extentation. Koner's flagers worked builty over the computer keys and the map grow double and uninterpretable. Moreison knew, however, that Konev could view it through a device that would render it stero Knew had down that dovice and usid, "Nazlya, this time chance is on our side. Whenever we are and in whatever direction we were moving, we'd be bound to eccounter a small with sconer or hare. In this case, it is smoother and we will price it is such a way that we will be able to ann Morrison heaved an internal sigh of relief, but could not help saying. "And what would you have done if chance had dictated a voin very far away?" Koney said coolly, "Then I would have had Dathney break communications again and steer to a closer one: Dezhnev, however, turned to stare at Morrison, made a grimace of disagreement, and mouthed the words, "Not enough energy." "Move forward, Arkady," said Boranova perceptority, "and get to the vein." After a few minutes, Dezhnev said, "Yuti's map is right, which I wouldn't have bet on with any embasiasm. That's it ahead." Morrison found himself staring at a curving wall reaching into the indefinite haze upward and downward and with just a faint st of tiling to it. If it was a vein, it was as yet not very far removed from a capillary. Morrison wondered uneasily if the ship would be able to fit inside i Boranova said, "Is there any way, Sophia, that you can give the ship an electric ch tern that will slip us into the vein?" Kallinin looked doubthal and Monteon. holding up his hand, usid. "I don't think son. Natatra. The individual cells may not be entirely dead even now, but containly the organization within them has been destroyed. I don't think any cell in the body can take us in by nincertosis or by any other means. "What do I do, then?" said Duzhnev unhappily, "Force my way in?" "Of coarse," said Konzy, "Lean assists the year wall. A small bit of it will then miniaturize and disintentate and year can move in. You won't have to use year motors much "Ab," said Dohney, "the expent speaks. The vois will minimum and disintegrate at the expense of our field and that would take energy, too - more energy than forcing our way in would." "Askady," said Bonnova, "don't be angry. This is not the time for it. Use your motors moderately and take advantage of the first weakening of the vein wall through min on to burst through. Using both technic "We can here so," uid Durhaes. "her usive so deen't make it so. When I was links, ney father uid to me once: "Volumence, my links one, is no manatese of truth."He told me this when I were with must careernese that I had net broken his size. He acked me if I understood the statement. I uid I dicht and he contained it to me were carefully. Then he wallowed me "Yes, Arkady," said Boranova, "but move in now Koney said. "B's not as though you're exists to flood the brain with blood. It wouldn't matter new that Shariary is dead, but, as it hareens, the blood ion't flowing new. Virmally nothing will lack." "At," said Dethaw, "this misses an interesting point. Onlineally, once we emter a vein, the blood flow would carry us in a particular direction. Without blood flow, I must use my engines - but in which direction must we go?" "Once we penetrate at this point," said Konev calmity, "you will turn to the right. So my cerebrograph says." 'But if there is no current to turn me to the right and if I enter at an angle to the left "Adeady, you will enter at an angle to the right. My cembrograph tells me that, too. Just push in, will you? "Go ahead, Arkady," said Bonnessa. "We have no choice but to rely on Yari's cerebrograph." The ship moved forward and, as the prove touched the vein wall, Momison could feel the slight vibration of the laboring momes. And then the wall simply gree and pulled away in all directions and the ship was inside. Durbary stopped the meters at coce. The ship moved is at a rapidly sloving pace, robunded off the far wall (maintaining contact to briefly as to cause no damage that Morrison could see), and emaightened out with the long axis of the ship along the economy manual of the visit. The ship's width was better than half the width of the blood vesual. Well," and Durhney, "are we pointed in the right disaction? If we're not, there's nothing to be done. I can't back up. We fit the vain two tightly for Albert to get our and turn so around and we have an isoutificient remaining supply of energy to minimutise further and make such a "You're resinted in the right direction " usid Koney startuby "hast art mension and you'll find out areas streach. The yound will not have r as use more " "Lat's hope it does. -- And if it does, how far do we have to travel before we can move out of the body?" T can be specified as a specified as Dehner uit, "May Lephin the weater move on ferever. What with minimuting and deminimuting, with secretage at very low efficiency, with wring explicates, and with chasing after Albert when he was lose, we have used up much more energy than we had counted on using. We had much more energy that we theophy that we theophy with secretage at very low efficiency, with wring explicates, and with chasing after Albert when he was lose, we have used up much more energy that we had counted on using. We had much more energy that we thought with attention of a secret more energy that we there at the secret more energy that we then attention of a secret more energy that we there attention of a secret more energy that we then attention of a secret more energy that we then attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there attention of a secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that we there exists at the secret more energy that the secret m Boranova said, "Do you mean we're out of energy "Just about. Haven't I been telling you this for quite a while?" said Dephney. "Haven't I been warning you we were ranning low?" But how low are we? Are you saying we don't have enough to carry us out of the cra "Ordinarity, we would have their for that even now. If we were in a living with we could cont to a Nixed cont on a Nixed cont Koney said, "We have only a ! Dezharv said fationsity. "Only a few? Less than the width of my naim? Really? At our mesent size, we've out kilometers to eo." Morrison said, "Should we deminiaturize We can't Durkey was now reaking way loads. We dot have the earry for it. Uscontrolled durkingstration is a room that lake a rest dual of effort. Under a rest dual of effort. Morrison muttered, 'I understand.' Kallinin's hand stole to his and squeezed it gontly. She said in a low voice, "Don't mind Dezhnev. He grambles and howls, but he'll get us there." Becautory usid. "Ackady. If tohumence doesn't examine truth, as you toking inst new, neither does it examines a cool head and a solution. Rather, the reverse. So why don't you just nesh your way along the you and methans the merry will hat until you reach the brookernic."

Dezhnev scowled and said, 'If's what I will do, but if you want me to keep a cool head, you must let me get rid of some heat.' The ship becausto move and Morrison thought to himself: Every meter we go is a meter closer to the hypodermic needle. It didn't make much sense as a comforing thought, since to fail to reach the needle by a small distance might be as fatal as to fail by a large distance. Yet it worked to slow the beat of his heat and it give him a sense of accomplishment as he wanched the wall side rapidly beckward The red connectes and elastics scened far more remembers new than they had been in the america and califlation on the ww in. Then there had been a blood flow and them had been only the relatively few objects in their immediate neisblochood that had moved alone the flow with them. Now

They even passed an occusional white cell, large and globule and quiescent. Nov, though, they were totally amergonoirs to the presence of a foreign object speeding by. In one case, the skip simply whipped through a white cell and left is spressing behind. Konev said, "We are going in the right direction. The vein is now distinctly wider than it was

And so it was. Morrison had noticed that without managing to grasp the significance. He had been too intent on simply moving.

He felt a small surge of hope. To have been going in the wrong direction would have been total disaster. The vein would sarst, leaving them addift in gray matter with, perhaps, insufficient fael to find and reach another vein. Koney was taking down something that Dechney was repeating to him. He nodded and said, "Have them confirm those figures, Arkady. -- Good?"

He spear mean time with his corebregraph and thin cald, "Lines, they later the vick we're is and they will be inverting a hypothemic another at a protice oper the There marked off on the corebregraph. We will reach it is half an hore: - Can you keep going for half an hore; Addaly "

"More likely a little loss. If the heart was beating --" "Yee, I know, but it isht," said Know. Then he said, "Natalya, may I have whatever records you have concerning what we have sensed of Shapirov's thought precessor? I am going to send the raw data -- completenest to the Greito Boranova said, "You mean in case we don't make it out."

"That's exactly what I mean. This material is what we went in for and there's no reason to have it perish with us if we can't get out." "That's a proper attitude, Yuri," said Boranova "Provided," said Koney, his voice suddenly taking on a tinge of anger, "the data has any value at all." Briefly, he glared at Morrison.

oney then bent towar techney and together the two began electronically tran ollected, computer to computer, from tiny to large, from inside a vein to the outside world Kalijaja was still holding Morrison's hand, perhaps as much for comfort to herself as to him. Morrison thought, He said in a low voice, "What happens, Sophia, if we ran out of energy before we reach t

She lifted her evolvores brieffy and said. "We'll just have to remain trassively in place. The people in the Grotto will try to reach us wherever we are." "We won't deminiaturize explosively as soon as the energy is gone, will we?"

first Eliteration

fir: (E)Duranter/Unad/Ulfering-Print

Morrison shrugged. "That was the consequence you must have accepted when you brought me here."

d you must send me back. You promised that over and over." "We will keep our promise." "Nor need you think I have spied on you. I have se Tixnow that. Yet, when you return to your own country, do you imaging that you will not be questioned exhaustively on what you have seen?"

"It will be out of the Grotto for you and back to the hotel." 'No no, Narabya. I want more than that. What follows that? I warn you that if the miniaturization project is going to go public and if there's a parade in Red Square, I don't intend to be part of ic." Parades are out of the question, Albert. We're a long way from going public, although we're closer to it by far than we were the day before younday. "Let me put it haldly then. I want to go back to the United States. Now." "As soon as possible, certainly. I imagine there will be pressure from your government. "I should hope so," said Morrison dryly "They would not have been willing to have you back before you had a chacce to help us or" - her eyes looked into his rather sensity - "from their point of view, spied on su. But now that you have done your part - and I'm sure they will be avant of that somehow - they will demand you back."

"In any case," said Morrison, "the nightman is over." "The nightmane? Come, give yourself a month or two and it will seem an exciting epicode that you'll be glad you experi-"I doubt it." 'You'll see. If you live to winness other such voyages, you'll be delighted to say, 'Ab, but I was on the very first,' and you'll never tite of telling the mory to your gran That's the opening, thought Morrison. Aloud, he said, 'I see you assume that I will see my grandchildren someday. What happens to me once we're finished with hezakfast, Natalya?

"And Shapirov's death? That will not be blamed on us, I hope?" The death is understood to have been unavoidable. It is well-known that he was kept alive as long as he was by advanced medical methods only. I doubt that it will be mentioned to any great extent in the records?

He was mildly disappointed, for he had looked forward to the presence of Sophia Kaliinin, but when she failed to appear, he decided not to ask after her. There were other questions he we Beraneya looked tired, as though the had not had enough sleep, but the looked harry, too. Or perhaps (Merrison thought) "harry" was too strong a word. Commend, rather,

She smiled broadly at this and Morrison nodded "Come. Albert, don't think so ill of us. Your feat in turning the ship by hand at the risk of your life was mentioned with emphasis."

You mean Shariny's thought's That was, of course, Yat's drawn. On the whole, it was formance that be tailed to all into following that decan. We would never have assumed the vorant otherwise. Not does the failure of the drawn dim our fat, Hal we failed to mean allow, we can be use that these would have been much criticium of our faily is assumed as the inter to have assumed the vorant otherwise. Not does the failure of the drawn dim our fat, Hal we failed to mean allow, we can be use that these would have been much criticium of our faily is assumed as the inter to have assumed as the interval as oned and said, "Would it have been diplomatic to emphasize that an American was one of the crew? Was I mentioned

She said, Thad a good talk with the commander her night and there was a two-way video call with Moscow. Carefully shielded. Comrade Rashchin himself spike with me and was clearly pleased in the highert degree. He is not a d "It sounds good for you. Natalya." The fact while project. You understand that, according to the sunstitive schedule under which we had verback, we want not expected to hand a voyage into a living hannan body for at least five years. To have done so with a group indequate ship and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of it allow is viewed as a group indequate bly and to have come out of its indequate bly and t "I doubt that we really got what we were after."

Having said this, he served himself a much larger helping than he served anyone else. The one consider present was a very blond tail max, who was introduced as the military commander of the Gronto, something which could be usen at once, since he was in full uniferm with a spare of decorations. The others some destinationally polite to him and extincelluratly succentromable at the same time. Throughout the musi, Montoon fish the numion returning. The commander looked at him often, with unsuling gravity, het said solving to him directly. Because of the commander's presence, he fish table to ask the important question and then, finally, when he might have naised is after the co And when he finally managed to tumble into bad, his last semiconscious thought was that there would be complications.

Broakfast was late and Morrison found that it was for two. Only Boranova joined him-

And they did not the disser assess to Morison to be noticeled with write how Threadout their stores to the standard to assess his specific bases of the standard to assess his specific basses his specific bases of the standard to assess his specif The main course at the damer was a reast goose of enermous size which Dezhnev carved, saying. 'Be absentions, my friends, for as my father used to say: Tating too much kills more quickly than eating too little.

He might even have fallen asleep. Thinking about it altervard made him fed centain he had. He would'hi have thenght it would be possible to be so cald-bloode, but it ware) cald blood, it was wareses, mile from tension, the feding that someone else was making decision, that be himself might be would's possible to be so cald-bloode, but it ware) cald blood, it was wareses, mile from tension, the feding that someone else was making decision, that be himself might be would's possible to be so cald-bloode, but it ware) cald blood, it was wareses, mile from tension, the feding that someone else was making decision, that be himself might be would's possible to be so cald-bloode, but it ware) cald blood, it was

"No. One of my own." "What I want," said Morrison, "is a chance at the bahroom, and a shower, and fresh clothes, and a good dimes; and a chance to show and scream, and a good night's deep. In that order, I think, especially with the bahroom coming first." "You'll have it all," said Kaliinin, "as will the rest of us."

"I think it was over eleven hours," said Kaliinin. Morrison shook his head. "It seemed more like elever "I know," she said, smiling slightly, "but clocks lack imagination "One of Dezhney Senior's aphorisms, Sophia?"

He said, 'I was just taking a last look at the ship because I don't intend ever to see it again - not at a distance, not in films, not in any form of reproduction." Then he was on normal ground again and the others followed. It was with relief that Morrison saw that every one of them was helped down. There would then have been some set of intercontrol colubration, but it was Bernaron who surreed forward, looking distancity disbervied and much unlike her usual calm, well-caned-for sell -- all the more so since the was warring the thin cotton coverall that did very little to hide the mature lines of her body. Tellow welkers," do said. "In our those will be appropriate commonies at some massible time to mark this fattastic voyage of som, but planse, we are in no condition to join you now. We must not and recover from an advance time and we beg your indeg They were all led off to wild shows and fuzzie werker and only Duchney had the resource of mind to take a class offend to him that contained something that was other water or volta and Morrison. For one, had no doobt as to which of the alternatives was, in fact, the case. The broad smile on Duchney's damo face as the strend made is contained something that was other water or volta and Morrison. For one, had no doobt as to which of the alternatives was, in fact, the case. The broad smile on Duchney's damo face as the strend made is contained something that was other water or volta and Morrison. For one, had no doobt as to which of the alternatives was, in fact, the case. The broad smile on Duchney's damo face as the strend made is contained something that was other water or volta and Morrison. For one, had no doobt as to which of the alternatives was.

"No no. that's all right." He fended her off. The room was convided. His vision had cleared to the noiset where he could see the crywel, face uson face. looking toward him, suffing, watching. He did not want them - Soviet citizens, all - to see the only American halbed to his feet by a vonue Soviet woman. Story, a link dualantly but by himself, he rose to his feet, supped sidewise to the door and very carefully in himself down to a small flight of state. Half a doore pairs of arms reached out to help him, sently disrugarding his words: "It's all sight. I don't need help." Then he said sharely. "Wait!" Before stepping to solid ground, he turned and looked past Kaliinin, who was right behind him "What is it. Albert?" she asked.

He wiped at his eyes, began to make the natural interpretation of his surroundings, and said, "Are we back?" "We are back. All is well. We are safe and we're waiting for you. You're nearest the doo Morrison looked back at the open door and started to his feet, rising a few inches and sinking back. 'Tin heavy. Kaliinin said, 'I know. I feel like an elephant myself. Just get up dowly. I'll help you.'

Now Memion did his beet to wash away thought, to close his mind. Ether he would be brought back to the standard workl, to normality, to reality, or he would die in a microbink and the rost of the Universe would go on without him -- as it would do, in any case, in reventy years, or ferty, How manufacture in the to be facilities in the second seco At another point, he head Boranova say, "Tell them, Askady, to evacuate Section C, to put in strictly long-distance controls. If we go, there is no point in carrying anyone with us." and exacuted. He would exacute if he were codered to be reven if he were not ordered to, but these might be those launtics who would be antises to be on the oper when the first crew to explore a loving body remend only. -- So they could tell their grandchildren, he supposed. What happened to such people, he wondered, if they ended up not having grandchildran - if they ded too young to see them - if their children chose never to have children - if the Data(), in you arear that is you differently instructing listed? In mesonic and trivic, One call ready take, of index gain a operation, which are not a trivic operation of the structure operator of the bandy has not a call thick of owneding structure struc

Knew made no renty to that, but leaned over toward Arkaby to result directly into the transmitter. The onnee ellipse because, for a moment, more markadly ellipsical, but this caused after a back from Knew. It became nearly circular after that. The needle was close now and was relating a thempsilon. And then there was stadien motion everywhere. The faint outlines of the red corpuscles and the occasional planter, moved, and converged toward and through the circle. And the ship was moving, too. Morrison looked up and around as the orange citcle moved nust them nearly on all sides, then slirned behind the shin, shrask meidly, and discovered.

ckoning was now thick and was approaching a small green circle, which, Morris

nare, he suddenly found himself too deepy. He would not be able to argue it out properly if there were any complication

with the conside world, he had been unable to eat or to do anything but pace back and forth. That, perhaps, was an exaggeration. He even said he had worp with joy at hearing that we were all safe and that may be true. Under

t that will stand forever in hierory. There will be no non-Soviet feat of the sort for years and our Soviet leadership is well-aware of that and very satisfied. We are assured of the money we will need for a considerable time. I imagine, retwided we can come up with a spectracial of

"But we have miced it," said Morrison tightly, "We're looking at it, but we're not there. To get into it, we have to turn - and that means that Deahney has to unbook com No use," and Durhney. Three enough power in my engines to have kept us going mother forty-five seconds muybe, but I ceruinly do not have enough to mart us moving from scratch. We are at this moment dead in the water and cannot move again "Well, then?" began Morrison with what was almost a wall. "Well, then," said Koney, "there is another kind of motion that is possible. That hypodermic needle has intelligence at the other end. Arkady, tell them to push it in very slowly:

Morrison had rison and was looking over Koney's shealder again. The combregraph, he judged, must be at enormous expansion, perhaps at maximum. The thin red line that had marked the path of the ship by deal n

"I should say yes," said Koney. "Slow down, Arkady. Cone "No, believe me," with Duchney. "At the present speed, I am certing through the blood with comparatively little turbulence, thanks to the struamlining and surface characteristics of the ship. If I dow down, there II be more turbulence and energy wave. Koney said, "But we don't want to overshoot the mark." "We work Any time you want me to cat the matures, we begin to slow down at soce because of the blood viscosity. As we dow down, the methodnese builds, we dow down faster, and in un socends we're metionales. If we had our mermai mass and itarrits, the rapid pace of dowing would planter us all up against the first of the ship? "Stop when I tell you, then."

Morrison, Kaliinin's hand still in his, squeezed convulsively and the young woman winced. Morrison said, "Tin sorry, Sophia." He released her hand and she rabbed it vigorously Boranova said, "Where are we, Yuri? Can we get to the needle?"

"Can't they do it now?" At this point, Durhney said, "Have we transmitted everything, Yuri?" "Yes. Everything." "Then it is my day to tell you that I have only enough energy to continue moving this ship for five minutes. Perhaps loss, but certainly not more,"

How can they find one cell among fifty trillion? Kalinin rorted his hand. 'You are in a presimietic mood. Albert, We're an easily recomizable cell -- and a broadcasting one.

"Possibly."

"
That won't do us any good, of course," said Morrison. "We'll die of apphysization. Without energy, we won't be able to recycle our air supply."

'Oh no. Miniaterization is a menatable state. You remember we explained that We'll stay as we are indefinitely. Eventually - sometime - this chance pseudo-Brownian motion of expanding and contracting will set up spontaneous deministurization, but that might not be for -- Who know

T said the people in the Gosto would try to much us. Our comparers will will be working and they can home in on us, cut to the vein and into it, and spot us electronically - or even visually.

"I think I would feel better if we find the hypodermic needle now and they don't have

'So would I. I am merely pointing out that running out of energy and not finding the needle is not the ultimate end.'

"And if we do find it?"

But it was dead reckoning and it could be off a bit. Koney was alternating his gaze between the corebrograph and the view up alteral of the ship. "We should have aimed for an artery," Morrison said suddenly. "They're empty after death. We wouldn't have had to waste energy on visco Konev said, "Useless idea. The ship cannot progress through air." He might have gone on, but at this point he stiffened and cried out, "Stop, Arkady! Stop!" Durhnev hit a knob hard with the hoel of his hand. It moved inward and Morrison felt himself way gently forward as the ship slowed and stopped almost at once. Koney rointed. There was a large circle, elowing with an onnee light. He said. 'They're using fiber optic methods to make une the tip elows. They said I wouldn't miss it.'

Koney said with grim satisfaction, "They've sacked us in. From this point on, we sit quietly. They will handle everything."

The orange circle expanded slowly, becoming slightly elliptical. Morrison said, "It's going to miss us

Kaliinin was looking down at him. "Wake up, Albert!"

Morrison said to Kaliinin, 'How long were we on the ship?'

"Then we are drawn out and the Grotto's own energy sources will be applied to the task of deminiaturizing us."

sses of anniniatatized material and it would be too difficult to focus the deminiatatizing field with sufficient accuracy. Once we are out and visible to them, the conditions will be entirely d

"Tree and we weet let it keep us from retarning yoe. It is quite certain you won't be able to tell your people anything they don't already know. They poke their nesses into our affairs carefully and skillfully --

"As your people poke their noses into ours --" said Morrison with some indignatio

"Undersheedy," and Bernarena with a negliguer wave of her hand. "Of course, you will be able to still them of our success, but we don't really object to their harving. To this day, Americans insist on believing that Soviet science and technology is second-class. It will do so good to stack them a lesses in this. One thing, though-"Ah," said Morrison.

"Not a large thing, but a lis. You must not usy we brought you have by force. In any public mention of this matter, you must state - if the question arises - that you came have volumarily, in order to toor your theories under conditions not available to you develow in the world. It is a totally likely thing. Who would debelieve you?

My government knows otherwise

The bar will denote be well and the well and the bar well

Morrison sighed. 'If you return me now, as you say you will do, I will keep quiet about this small matter of kidnapping.'

You use the conditional. You use 'it'' Bernovs was erine. 'You clearly find it resultsoome to believe me to be a person of honer. Why? Because I am a Soviet. Two emerations of peace, we extend to be a person of holds's persist. Is there to be no hone for hammaly?

'Good new days or not, we still don't like your system of government.

"Who gives you the right to judge as? We don't like yours, either. -- But never mind. If we begin to quartel, that will spoil what should be a happy day for you -- and what is a happy day for me."

"Very well. We will not quartel."

"Then let us ony good-bys now, Albert, and someday us will most again under more normal circumstances I ans sure." She held out her hand to him and he took it. She went on, "I have adead Sophia to exect you back to the head and to make the arrangements for your leaving. You will not dig

Morrison pressed her hand strongly. "No. I rather like Sophia."

Boraneva smiled. 'I had sensed that somehow

It was a happy day for Bonnova and her exhaustion did not prevent her from enjoying it.

Exhaustion! How many days of not, how many nights of sleep, how long a stretch at home with Nikolai and Aleksandr would it take to care that? But she was alone now and for a period of time there would be nothing to do. Seize the moment!

Bonnova stretched out lacuationsly on the coach in her office and gave herself over to a carious jumble of thought -- new a commendation from Moscow, with a promotion, all mixed up with days on the beach oband and son. It became almost real as she slept and dreamed that she was j Firmly into the cold waters of the Black Sea in heedless lack of concern over the possibility of drowning himself. She was carrying a daten that she was beating widtly is order to attract the amontion he stabborshy re

And the vision broke apart and faded and the drumbeat was a hammering at the door.

She rose with a confused effort, smoothed the blosses she was waaring, and strode to the door in hasty concern. This turned to fury when she threw it open and found Konev frowning darkly, his first raised to

"What is this, Yuri?" she said indignantly. "Is this your way of announcing yourself? There are signals."

Which no one answered, though I knew you to be within.

Berness metioned him is with a mick source of her head. On was not anxious to see him and he was not a pleasant side

She said, "Haven't you slept at all? You look awful."

"I haven't had time. I've been working

"As what?"

"At what do you suppose, Natalya? At the data we obtained yesterday in the brain

Boranova felt her anger scep away. After all, it was Koney whose dream this had been. The success of survival was sweet for everyone but Koney. Only he felt the failure

She said, "Sit down, Yurf. Try to face it. The thought analysis didn't work - and it couldn't. Shapirov was too far gone. Even as we went in, he was on the point of dash.

Koney looked at Bonneya blankly, as though totally disperarding her words. "When is Albert Morrison?" "There's no use in hounding bim, Yari. He did what he could, but Shapirov's was a dying brain. – Lisson to me. It was a dying brain."

Again that black look. "What are you talking about. Natalya?"

'The data we got. The supposed data that you're straggling with. Let it go. The voyage has been a marvelous success even without it.' Koney shock his head. "A marvelous success without it? You don't know what you're savine. Where is Morrison?"

'He's gone, Yuri. It's finished. He's on his way back to the United States. As we premised "

Konev's eyes opened wide. "But that's impossible. He can't go. He musta't go.

"Well, now," said Boranova calmby. "What are you talking about?"

Koney rase to his feet. 'I went over the data, you stepid woman, and it's all plain. We must keep Morrison. At all costs, we must keep him. Bozanova's face reddened. 'How date you insult me, Yuri'l Explain yourself at once or I will have you suspended from this project. What is this new mud fixation of yours on Albert'

Konev lifted his hands halfway spward, as though impelled by an overwhelming desire to strike out at something, with nothing present to strike at.

He gapped. "In wary, In wary, In wary, In whiteve decision, Bet you must indexnated. All though our may in the brain - all the inter was trying to up Shaptor/thought - Abbert Marsinen was lying to us. He have what was happening. He must have known and he carefully led us in the wrong direction. We must have have have hire hire directs. We can serve to him p

CHAPTER IS -- RETURN

The treable with triamph is that you may be on the other side.

-- Dephney Senior

Morrison was doing his best to keep his feelings under control. These was a natural elation. He was going to go home. He was going to be from He was going to be safe. Much more than that, he would -But he dated not think of that climactic bit as yet. Yari Koney was fearfully intelligent and alwady suspicious. Monison's thoughts, if Koney concentrated on them, might give themselves away in his facial exp

-- Or were they just playing with him? That was the other side of the coin.

Were they planning to break his split and turn him to their own uses? It was an old trick, to raise hopes and then dash them -- far worse than having no hope at all at any time.

Would Natalya Borazova do such a thing? She had not horizzed to take him forcibly when he would not come willingly. She had not horizzed to threazen to desrey his reputation forever to get him on the ship. How much farther would due go? Would the onp at nothing

His heart bounded with a marked relief when Sophia Kaliinin appeared. Surely she would not be party to such a deception.

He believed that even more firmly when she smiled at him, looking happier than he had ever seen her. She took his hand and tacked it under her ann.

"You'll be esine home now. In so elad for you," she said and Morrison could not make himself believe that those words - their intention, her excretesion - were all part of a careful lis.

evertheless, he said cautiously, "I hope I'm going

And the said. "You are. - Have you ever been on a skimmer?" For a moment, Morrison snambled on the Russian word, then used a translated English phrase. "Do you mean an SPF - a solar-powered flyer?"

"This is a Soviet design. Much better, It has light engines. You can't always must the sun."

"But why a skinner, then?" They were moving briskly toward the passageway that would lead them out of the Grotto. "Why not? We'll be at Malenkigrad in fifteen minutes and since you've never been in a Soviet skimmer, you'll love it. It will be one more way of celebrating your return.

"Im a little nervous of heights. Will it be safe?" "Absolutely. Besides, I couldn't resist. We're in a w and how much large it will her. Waterset wat we get to some the load, 'A sizener's where we will ward, addrey ential all over their faces and usid, 'By, contaidy, Dr. Kalinia, h will be waiting for you. Day theory southy, h waith have had to fill out a proof-of-seed from fire a place of benefit. Today I an a how of the Soviet Union – and Ecitivy, any to W all are. You, on, Aber

Those I won't be expected to stay for the official commonies," said Morrison, still cautions,

The official commonies will be confined to the Gouto, of course, and won't be elaborate at all. Your scrull will andoubtedly be forwarded to you. Perhaps our ambassador can give it to you in a quiet Washington.

"Not necessary," said Morrison, "I would appreciate the honor, but certine it in the mail is all I mally want,"

They had turned down a corrider that Morrison had not taken before and then walked long enough to make him wonder uneasily when they might be going. No need to have worried, Morrison thought as they emerged into a

There was no manufateg the distance is that long value, glurining with a layer of phonoshic cell along their anter spees states, you much a American SPF bald. The American Janes, barrow, stale on the space barriely. The distance the use bal main respective parent, do doth - a soils. Källish might present that as 35 soil inprovement the Merican supeced that the Soil phonoshic cell sons at a set distance the use bal main respective parent. A mechanic was standing near the skimmer and Kalinin approached him with long, confident strides. 'How does it test out?'

"Sweet as a dream," said the mechan

She smilled and nodded, but as he stepped away she mattered to Morrison, 'Till check it out anyway, of course. Eve seen dreams that turned into nightmares rison studied the skinner with a mixture of innerest and approhension. It looked like the skeinors of a plane, with everything somehow thinner and longer than it should be. The cockpit was tay, like a scap bubble under the hage flap of wings and the long backward

Kalisin had to bead hereif nearly double to climb in. Morrison watched her as the fddied with the controls. Then, after what seemed a considerable lapse of time, the taxied it down the field, turned it, and came back. She raised the rotos and it them turn dowly and eventually everything was that down and the got out "It's working nicely," she said. "The fael supply is adequate and the sun is shining builliantly. One couldn't ask for more

Morrison nodded and looked around. "One could ask for the pilot. Where is he?"

Kaliinin froze at once. "Where is he? Is there some sexual requirement for the task? I pilot my own skimmer."

"You?" exclaimed Morrison quite automatically.

"Yes, I! Why not? I have my license and I qualify as a master pilot. Get in?" n surry," stammend Merrison. "I - I randy fly and piloting anybing through the air is almost a mystical thing to me. I just assumed that a pilot didth do anything but piloting and that if semeone did anything else, he couldn't be a pilot. Do you know what I mean

"The not even going to try to figure it out. Albert, Get in."

Morrison climbed in, following her directions and doing his best not to damage his head on any portion of the skimmer -- or, perhaps, damaging the skimmer.

Her voice trailed away and for a moment her face darkened, but then an inner thought seemed to illuminate her into a smile.

'But he failed at that. We didn't get the necessary information from Shapirov's brain. You know we didn't "

He sat in his war, staring in horror at the skimmer's open side to his right. "Built there a door to close?"

Why do you want a closed door? It would speil the wonderful faeling of flight. Strap yourself in and you'll be perfectly safe. - Here, TII show you how. - An you ready now? She was in the seat beside him, looking quite confident and pleased with hereaff. They were one "Im resigned," he said. "That's as close as I can get to ready."

"Not really -- if you have what you're doing. Once we skinned along the foothills of the Cancesses and that neight have been dargenous. A wind upuil cas easily smash you into a hilbide and that wouldn't be firm at all, but we were young and cardres. --Though I might have been better off if that had happened."

"b's simple accept, Albert, He depived me of love and my daughter of a further when Thad to vary of ortiking back. That did not bother him as long as he had his dream of bringing miniatrization to practical love-ancept fruitions to that he might become, at a boand, the most famous scientists is the world -- or in history

And Kallisis usid between her teeh, "It's no continental memories that makes me happy, Laware you, Albert. Auger and fractuation and - and hearbreak can make a person Scious. I want revenge and I am mean-spitted energit - well, human energits - to egipy it when it

h, but you don't know him. He never gives up; he's driven by the Faries. Fve seen him, fleetingly, looking at you, after the voyage through Shapirov's body was done. I know his looks, Albert I can sell his throughts even from the droop of an systid. He thinks you h

Merrison stared at her in anonishment as the skinner moved alone in resonses to her rock-steady hard at the controls. He had not thought that Kalinin was catable of wearing an extension of such consumine and malimant iov.

'Don't be silly. You're going to love this. We'll use the motors to rise

There was a high-pitched throw of the small engine and a drythmic slop as the restor began to spin. Slowly the skinner rose and - as dowly - it turned. It canned to one side while turning and Metricon found himself learning out over the open side and training usly against the strap that held him. He bandy managed to fight off the strong impulse to throw his arms around Kaliinin for nothing.

The skimmer straightened and Kalinin said. "Now, listes," as the turned off the ensite and these in a switch labeled, in Cvellic, SOLAR. The theob cased and the reness slackened as the forward recorder beran to turn. The skimmer moved dowly and almost sliently forward.

"Linen to the quiet," whispered Kaliinin. "It's like diffring on nothing."

Morrison looked down uncasily.

Kallish self. We want full from I's cloud passed over the use of I's cloud planet over it a cloud planet is none want bull by a convert in the second operation is none planet in the second operation in the second planet is none and planet is none provided and there's a

Morrison veallowed and said. "It's a centle motion."

in his life; certainly more than he wanned me or his child. And I'm taking you away from him, Albert. With my own hands I am taking you out of the Grotro and wi

"Of coarse. We're not going much faster than an automobile would go and the sensation is much planamer. How it. Try to relax and look at the sky. There's nothing as praceful as a skinner." He said "Hear loss have you been doing this?"

When I was twenty-fore, I get my montry's licenses. So did Yu- to did he. Many a pacterful unmane adventoes we quest in the air is a chinemer like this. Once we each hand a racing element and marked out lower's knows in the air. 'Her face weisted dighty's as the aid it that and it occurred to Marrison that she had obtained a distance for the short hay to Malendaged only for the take of a norr

Morrison felt his distrust mounting again. Why did the thought of Koney make her so happy, when she could not bear to look at him when they were together in the miniaturized ship? Morrison said, "You don't seem to mind talking about him, Sophia." Then, deliberately, he used the forbidden word, "About Yari, I mean. It even seems to make you happy. Why is that?"

"It doesn't matter whether you do or not, Albert. He thinks you do and he wants you and your device with a greater yourning than he ever wanted anything

"That must have been dangerous," he said

"Revenge? I don't understand."

'Of what was in Shapirov's brain? I don't. How could I?'

Br. J. Doomers Charles Marian Prince CODIA Dester Sant Maines Paracie COV con CORS. A 2004 Branneys had listened to Kneey's emotional and brandless account and felt hereoff carried along by the wave of his stars conviction. That had happened before, when he had been convinced that Shapisor's dying mind could be tapped and that Morrison, the American neurophysicity, was the key to doing that. She had been overpt along the traited to red She said finally, "That sounds quite mad." Koney said, "What's the difference what it sounds like if it's true?" "Ab, but is it mus?" "I am certain." Bozanova mattered, "We need Arkady here to tell us that his father assured him that vehemence was no guarantee of truth." "Neither is it a examptee of the reverse. If you accept what I say, you must also see that we can't let him so. Certainly not now and possibly not ever," Boraneva shock har head violently. "It's too hats. Them's nothing to be done. The United States wants him back and the government has agreed to let him go. The government cas't very well backtack new without bringing about a ver Considering what is at stake. Nataba, we must stavily risk it. The world crisis will not exclude. There will be load talk and much nonseine for a month or two and then if we have what we ware, we might let him on if absolutely necessary - or we might armnee an accident Boranova rose to her fast angelly. 'No! What you are suggesting is unthinkable. This is the twenty-first century, not the twentieth." "Natalya, whatever century this is, we face the cuestion of whether the Universe is to be ours - or theirs." "You know you'm not going to convince Moscow that that is what is at stake. The government has what it wants, a safe voyage into and out of a body. At the moment it's all they want. They never understood that we wanted to read Shapirov's mind. We never explained that." Cons. Yui. D: vos knew bow low it would have us be needed them that Albert would have to be taken face/bit (Ib e did not const voluent/P) Ther would in that wanned to risk a crisis - even as mach a crisis - even as mach a crisis - a tere new lack. Which is a neter one indeed. You will now be added them to be a mach have would have to be taken face/bit (Ib e did not const voluent/P) Ther would in that wanned to risk a crisis - even as mach a crisis - a tere new lack. which is a neter one indeed. You will now be added to be added "The government is not all one piece. There are many high efficials who are convinced that we are non-sager to give is to the Americans, that we pay no high a price for the occasional pat on the head we receive. I have people to whom I have entry -Three long known that you have. That's a dangeness game you play. Yuri, lighter men than you have been caught up in that yort of intrigue and have come to derivable ends." "It's the chance I must take. In a case like this, I can turn the government amount. But we must have Albert Marrison in our own hands if we're to do it. Once he's gone, it will be all over. -- When is he supposed to be leaving?" Nighthall. Sophia and I agreed that, for the sake of avoiding obreviewness and of needlessly provoking those who tend to be against accommodation with the Americans, night is better than day. He stated at her, eyes opening widely enough so that they almost seemed promberant. "Sophia?" he said harshly. "What's she got to do with it?" "She's in charge of the details of returning Albert. She requi "She requested it?" .
"Yes. I imagine she wished to be with him for an additional while." With a teach of spite, the added, "Perhaps you dide't notice it, but she rather likes the American. Knew meered in diagont. "Not a bit of 1. Hanow hard doti. I Hanow hard doti. I Hanow hard doti. I Hanow hard for it hanow anything at all - every throught in har heads. Sha's genting bins servey from me. Senting right next to bins in the dairy, wandhing his every move, due must have genered his importance and due means to deprive me of him. She won't wait for sightful. She'l harry bins off z once? He rose and left the room at a run. "Nari " Boranova called after him. "Yari what do you intend to do?" "Stop her," floated back the answer. She gand after him thoughtuby. She could out him. She had the authority. She had the matherity. She had the manne, And yet - What if he was right? What if what was at stake was indeed nothing less than the Universe? If the supped him, everything - outything - might be handed over to the Americans. If whe let him go, there She had to come to a decision at once. She began again. If the ecoped him, the would have does contribute, if he then turned out to have been right, the Manne for having ecoped him and having lost the Universe would rest squarely on her. If he numed out to be wrang after being ecoped — her action would be forgenter. Then is nothing character about a miseake that is not made If the did noting to one him, however, then all was on Konev's band. If he comehow provened Merican's many to the United States and if the government were then hamilianingly foread to release him, is would be Sance who would be Manuel. Research would how noting, for he had doubd off without stilling her where he was going to do and the Well, then, if she storeed him, the worst was blame, the best was neutral. If she did nothing, the best was credit, the worst was neutral. So Boranova did nothing. Morrison decided that Kaliinin was right. As the minutes passed, he grow low uncomfortable in the skinener and even began to experience a feeble pleasure He could see the ground clearly through the open latticework that made up the chaosis of the craft. It was about thirty meters below (he judged) and moving smoothly backward. Killinin sat at the controls, complexity absorbed, though it didn't seem to Morrison that the had much to do. Presumbly, it was skill and patient observation that made it possible for her to keep the skinemer on track without minute-by-minute adjustme He said. "What harpens if you find yourself movine into a headwind. Sorhial She said without takine her even from the controls. "Then I would have to use the enviro and water fuel. If it were a flooh wind, it wouldn't out to use a deimner at all. Formanily, today is ideal deimner weather." Morrison bugan to fiel something that was almost well-being for the first time duce having left the United States - no, duce a considerable length of time before that. He bugan to picture himself back in the United States; it was the first time he had du He asked. "What harvens after we reach the hotel in Malenkierad?" "Car to an airport," said Kaliinin crieply, "and then you'll board a plane to America "Tonight, according to schedule. I'll try to get it done more-quickly. Morrison said with what was almost joviality, "Attainus to get rid of me?

And to his surprise, the answer came back at once. "Yes. Exactly." He studied her face in profile. The look of studied ha since vanished, but there was a settled anxiety about her expression that caused Morrison to quiver. The picture of himself back in the United States began to fade around the edge He said, "Is anything wrong, Sophia?"

"No, nothing wrong now. It's just that I expect that -- he will come after us. The wolf is in pursuit, so I must get you away quickly if I can."

The city of Malenkigrad lay below them, although it was not exactly a city. Small in name, it was small in fact and it ravoled off in all directions into the flat countryside

It was the befrom community for the people working on the minimutation project and during the day - now - it seemed all but deserted. There was a moving vehicle here and there, occasionally a patientiae, and, of course, children playing in the desy stress. It occurred to Monteen that he had so vary of lacoving where, is the mighty ereach of land that made up the Soviet Union, Malenkigrad and the Genon might be. It ware's in the birch forces or is the nanda. The early numeer ware ware and the ground looked seminiral. He might to in coursel Avia or is the suppose near the European vide of the Caspian. He could not say,

The skimmer was dropping now, more gently than an elevance. Moreison would not have believed that so southing a docent could be possible. Then the wheels tracked the ground and they braked to nearly instant halt. They were in the rear of the hotel, a hotel the small size of which he could appreciate when

Kaliinin left the skimmer with a lively jump and motioned to Morrison, who emerged more sedately.

He said, "What happens to the skimmer now?" She answered carelevely. "I'll rick it us on my return and take it back to the Grotto field if the weather holds. Come, let's co around to the front and I'll set you into your room, where you can not a little and where we can shan the next stree.

"The room with the soldiers watching me, you a She said impariently, "There'll be no soldiers watching you. We're not afraid of your trying to escape new." Then, with a quick glance around, she added, "Though Ed rather have the soldiers, actually."

Merrison looked about, too, a bit antiously and decided heid rather not have the soldiers. It occurred to him that if Konev came to reclaim him, as Kallinin clearly feared he might do, he might early come with soldiers at his back.

And then Morrison thought: Or is this really something to faar? She has a thing about Yuri. She'll believe anything of him. The thought did not quiet him, however.

Morrison had not seen the host is broad daylight from conside; he had not had the loisure to endry it in any case. It occurred to him that it was probably used only by visiting officials and special gasen - such as he himself. If he could lay chains the cangery. He was

n and delay your leaving for a long time. He can be very persuasive, our friend, when he is in the full grip of his mania. He can every even Nataly

It was at the moment be thought of the distair room that they aperached that frost entraces and there, to one side, eitrize in the one and rooming over a book, was a storably women with reddish-brown hair. She was wanter half-one cacles, northad law on her sows. (Merisson was sumpled at that bit of acchains.) It was ran to see classes in these days when eve-mobilities was resulted and many bocome normal.

It was the glasses and the stations look on har face that charged her appearance so that Morrison might easily not have recognized her. He would not have, pachage, if he had not just thought of the daining room. The woman was the wairnes to whom he had appealed for hady these evenings before and who had failed him – Vail He said autoruly. "Good memore. Comrade Paleron." His voice was stiff and his excression uniformity.

She did not seem disconfined by this. She looked up, removed her glasses, and said, "Ah, Conrade American. You are back safe and sound. Congrat "For what?"

'It is the talk of the town. There has been an experiment that was a great success Kallinin, her face like thunder, said sharply, "That should not be the talk of the town. We need no wagging tongues."

"What wagging tongues?" said the values with split. "Who here does not work at the Gento or have a milarity there? Why should we not know of it and why should we not speak of it? And can I fail to here? Most I stop my earc? I cannot carry a tray and pat my fingers in my earc, too. She tarned to Morrison. 'Thear that you did very well and are greatly praised for it.'

Morrison shragged.

nd this man," the waitness said, turning to the frowning and inc asingly impariant Kaliinin, "wished to have before he had the chance to participate in the great deed. He turned to me for help in his scheme to leave -- to me, a wairress in at once, of course, and that made him unhappy. Even now, see how he glasss at me." She wagg os you are, the toast of Malenkigrad and perhaps even of Moscow. And the little Toa Kullinin suid. "If you do not stop this immediately immediately. I shall report you to the surfaceline "

won the bartle of wills that followed, she could claim the credit of having done nothing to stop him. She could say that it had been with her perm

'Go ahead,' said Paleron, her hands on her hips and her eyebrows lifting. 'I do my work, I am a good citizen, and I have done nothing wrong. What can you report? - And there is a fancy car here for you, too.'

"I saw no fancy car," said Kallinin.

"It is not in the parking lot, but on the other side of the hotel." "What makes you think it is for me?"

"You are the only important persons to approach the hotel. For whom, then, should it he? For the porter? For the desk clerk?" 'Come, Albert,' usid Kallain. 'We are wasting our time.' She brashed past the waitrees, doing this so closely that she stepped on her fort - pathaps not by accident. Morrison followed meekly.

"Thate that woman," mattered Kaffinin as they walked up the flight of stairs to Morrison's second-floor room.

'Do you think that she is an observer of this place on behalf of the Can "Who knows? But there is something wrong with her. She is possessed by a devil of immedance. She does not know her place

"Her place? Are there class distinctions, then, in the Seviet Union?"

"Don't be surgeries. Albert. There are supposedly none in the United States, either, but you have them surgly. And so do you. I know what the theory is, but no person can live by theory alone. If Ardady's father didn's sy that, he should have."

They walked up one flight of stairs to what had been Mention's room safer in the work and apparently still was. Monison towed it with mild detants. It was a room vithout charm, though the suffight made it seem loss giocety than he remembered it to be and, of course, the prospect of manning home was enough to add gitter to anything. Kalianis sat in the bener of the two areachairs in the room, her logs crossed, the upper log ovinging in short arcs. Morrison sat down on the side of the bed and watched her logs thoughthally. He had never had good occasion to admire his own calmness under pressure and it seemed to him rather unusual to watch someone be more nervous than he

He said. "You seem emaily troubled. Sophia. What is wrong?"

She said, 'I told you. That woman Palaron troubles me. "She can't urset you that much. What's wrong?"

'I don't like waiting. The days are long now. It will be nine hours until sunset."

"By amazine that it's only a matter of hours. The dielematic maneuverine could have continued for months." He said so listely ensuch, but the thought eave him a cold feeline in the pit of his ensuch.

Not in a case like this. It is use it work before, Abort Test Studies are instruded. It is not an Anatoxing place that's coming, like gias a Anatoxing place that's coming is efficient writing is at instrudied or government blis away from. Bit the Sweden – Weit, days ures as a instrudied processor to unitors by common consent and they wand to work hard to drives any possibility of fictoria.

"In the United States, we consider Sweden lakewarm toward us at the best. I think we'd prefer to have Great Britain --"

'Oh come, you might as well say Texas. As it is, Sweden may be hikewarm toward you, but she is considerably less than that toward us. In any case, it's Sweden and their principle always is that if it is necessary to define a situation, it is bost to define it writhly.

'It seems quite overfit to me. Certainly, I'm the one who should be in the greater harry, since it is I who are most anxious to leave. Why should a few hours matter to you? "I've told you. He is after us." She ground out the pronoun.

7 What can be do? If your government is giving me up -

"There are elements in the government who might easily not wish to give you up and our -- friend -- knows some of these well."

Morrison raised a finger to his lips and looked around.

first Eliferation

Morrison shrugged. "Then say what you wish."

"Our friend is not a political er . mist himself, but he finds he can use these in high office who are. There are extremists in America, too, I suppose.

"Those who think our policy toward the Soviet Union is too mild?" Morrison nodded. "Tve met a few."

Vell, then, there you are. His ambition consumes him and if extremism will advance his plans, then he is pre-

"Surely you don't think he can arrange some sort of coup in Moscow and put the diebands in control and do it all in time to stop me from leaving for home this evening?"

"You've got it the wrong way around, Albert. If he could somehow prevent you from leaving and precipitate a crisis, he may be able to persuade some in the gover

Kallinin fell into a silence and bit at her lower lin. Finally she looked up and said. "He hasn't eiten up on you and he won't. Fin sum of it. Twe eot to eet you aware."

She rose suddanly and paced up and down the room with short, quick steps, looking as though the ware trying to force the Universe into taming her way. She stopped in front of the door, listened, then jerked it open se

Br - E. Downey, A. Jan S. Merson, Prince S. 2004 (e). Dester har S. 2014 (e). Function 301 (c). arXiV: 2014.1011 (c). Valeri Paleron, her bland expression shifting rapidly into surprise, had one fist raised, as though she were about to knock

"I?" said the waitness. "I want nothing. It is a question of whether you do. I have come to ask if you would like some ten

fir i EDucarro Cha

. Morrison called out hearsely, "Your government will not endure this. You have orders to release me."

They were whitestars together, so lost in each other that Kalinian second support to the way will holding the support. For a moment, her interes best as though the way exist by dominant in the bod, but then Koney unit constrained and was all attention and arais support of the support.

e aux (transport database closed lips, "Why do you use my mme? The last time lheard you use it, you usid, Sophia, we will nove quak again, never look at each other again? You are nove quaking to mo, looking ar mo. Co away and keep your premies, you miserable.-' (the used a Ressian word that Merrison distributed at the termine distributed at th

She took a style-A. To chose. Taranahy to sheet and I night do to own if you stand when you and, but hay in initial what a state of took a style-took out in YVOT be according and you'? Wake of this path amount in any stake you than to mover or own day. For own head fast quarks grade and a style and the state and the state

For a day or so, he had thought that Sophia Kallinin had been semanted to him, bet, of course, she hadri. He had been noting more than ber wappen against Know and when Know had called to her -- becknool to her -- the had returned to him and had then no further uses for her wappen, either fire Morrison or for her summer

What was the use? Over and over again, he thought this, as though the phrase were reverberating in an ocho chamber. He was a loser. He had always been a loser.

He looked at them dully. They were standing together in the smalight streaming through the window - they in the smalight, he in the shadow, as it must always be.

Paleron said, "Academician, Doctor, we could become conspiceous how. Let us go back to the American's mom. Come, Coursede American, and come quietly or I will be compelied to hart you." Koney, catching Morrison's eye, smiled tightly in absolute triamph. He had it all - his woman, his child, and his American - and Morrison sure his datam of neuroing to America pop like a suap bubble and vanish

Morrison sat in the host from that he had, for some fifteen minutes, thought he would never see again. He was close to despair - closer, it seemed to him, than he had been even when he was alone and lost in the cellular stream of the neuron.

As though the ware electrowalking, the moved toward Koney, holding the stanger out to him. Morrison shouted, "Your orders -- to the plane?" He rashed wildly at them. But as he did so, he collided heavily with another body. Arms were around him, holding him closely, and a voice in his ear said, "Take it easy, Commis American. Do not attack two good Soviet citizens.

Kalijaja said. 'Is this true, then, Albert' Do you confirm Yar And Morrison, too late, clamped his mouth shut, but his even gave him away. Konev caid, "My love has been summerving. Sophia. As much as you have suffered, so much have 1. But give me the American and there will be no more of it. I will no longer ask that I be spared any chance of hindrates. I will do my work and have you and the child, yoo, whatever the cost may be - and may I be censed if I do Kalijaja starod at Koney, her eves suddenly swimmine in tears. "I want to believe you," she whispered

It was Valeri Paleron, who held him in a strong and unbreakable grip. Kallinin chang as closely to Konev, though with different effect, the stanner still gripped loosely in her right hand.

"Then believe. The American has told you."

CHAPTER 19 -- TURNAROUND In the true triamph, however, there are no lowers. -- Deahney Senior

And Morrison heard himself say, "That much is true, Sophia. He loves you and he has always loved you -- despenaely." Kalinin from for a moment. Her free left hand contacted at Morrison while her even remained fixed on Koney. "How do you know that, Albert" Did he lie to you, too?" But Koney shound in excitement, 'He knows. He admits it. Don't you see'! He sensed it with his computer. If you now let me explain, you will believe everything.

Know thook his head. "How can I convince you? - Well, #1 didtherantly fraw is all away, I cart expect to get it back again, can 17 Will you, in that case, give me the American for the sake of our mation and then throw me away? Weald you let me or Twoddy't believe the explanation." Kalinin threes a onick educe in Merrison's direction. "Do you hear this man. Albert?" the vaid. "You don't know with what creative he cast new dawhere and me acide. Now he structure to believe that he lowed me all alone."

"No! You kept saying that, but it's not so. If I have some regard for myself now, it is because only I can save our country."

Konsev's head bent. "How else could I drive you away? How else could I be use I would work unimpeded? -- How you. I have always loved you. I have known all along it was my child and that it could be no one else's." "Do you want Albert so much?" Her summer did not waver. "Are you willing to usy that is is your child -- say you love ma -- bulieve I will, for that, sive you Albert -- and then deny it all amin? How low an originative of my intelligence."

"You believe that?" said Kallinin, wondering. "You multy believe that? - You are mad to do so." Not at all. I latow my own worth. I couldn't let anything dener me - not even you. For the value of our country and my work, I had to give up my child. I had to star myself in two and threw the bener half of myself away. "Your child?" Kaliinin said. "Are you claiming responsibility?"

Koney, white to his laps, said a third time, "Sophia - Listen to me. Believe that every word I have ever said is a lie, but listen to me new. That American is a deadly threat to the Soviet Union. If you love your country 'm tind of loving. What has it gotten me' "And what has it outen me?" whisneed Koney "You love yourself," said Kaliinin bitterly

"Of course. Worse than a run, ion't it? I thought you might interfere, so I'm menared." "That's also illegal." "Then report me and Fil plead the need to fulfill my orders against your criminal interference. I will probably get a commendation." "You won't. Sophia --" He took a step toward her

Merrison sail. "Ill take care of him. Southia, You come the limo door." He fait himself remables slithly. Keney was not a large man, bethe looked wiry and he was clearly determined. Merrison did not believe himself to be a succeedul eladiane under any conditions and he certainly didth feel like one normality. Kallinin lifted her hand, palm turned toward Morrison. 'Stay where you are, Albert ' She then said to Koney, 'How do you intend to stop me. Do you have a gun?' Konev lookad surprisad. "No. Of course not. Carrying a hand weapon is illegal." "Indeed? But I have one." She drew it from her iacket pocket, a small thing almost enclosed in her first its small marzle eleganing as it edeed through the space between her first and second finenes.

"Don't. We need him. He has deceived us." Konev's voice was becoming quieter.

"No. He's not going."

"Sophia," he said again.

Koney backed away, eyes widening. "That's a stanner."

'Til say no such thing. The Soviet Union needs him "You care only for yourself. Stop out of my way." Koney moved between the two others and th rtance of his staying here. Believe me. My report has already gone to Moscow."

"So you say," said Kabinin. "I have my orders. I am to take him to a plane and see that he gets in. You cannot have him." 'It's not I who must have him. It's the nation." "Tell me. Go on and tell me. Say that Holy Mother Russia needs him and I'll laugh in your face."

The same and I can guess to whom it's going, too. But old graff-and-gramble work be able to do anybing. He's a blowhard and we all know that. He work date say a word in the Presidian and if he does, Albert will be long goos."

Morrison said, "Come, Sophia." . He might as well have said nothing. When she spoks – finally – it was to Konev. "What do you want?" she demande "The American" usid Keney in a tone no other than here "To taking him away."

Morrison was the first to speak. He said a little baskily, "Have you come to see me off, Yari? If so, good-bye. Im leaving," The phrases sounded false in his own ears and his heart was pounding. Yuri's eyes shifted just enough to glance quickly at Morrison and then moved back to their original position.

Morrison, a little breathless, said, "They're certainly supplying us with delate transportation. Can you drive that thing?" "Like a dream," said Kallinin, smiling -- and then came to a full and sudden halt, her smile forgetten. Around the corner of the hond stopped Konev. He, too, haled and for long moments they did not site, either of them - as though they were a pair of Gorgons, each of when had frame into stone at the glance of the other

"Then we'll wait at the airport, rather than here, and we'll at least be certain that as soon as it arrives you can beard it. I want to see you safely gone, Albert, and I want to see his face afterward." She was out the room and clattering down the stairs. He followed hastily. He was, in truth, not sorry to be going. They strude along a carrented corridor and through a door that led directly out to the side of the hond. There, pulled up close to the wall, was a highly polished black limousine.

She said, "Exactly, You talk endlessly about humanity, about the importance of a global view, but if we scope you down to your emotions, it's your constry. Have a contry alos, a language, a lineman, a culture, a way of life. I don't want to give it up." Morrison sinhed. "As you say, Sophia." Sophia said, 'But I cannot endam it here in this room any longer, Albert. There's no use waiting. Let us get into the car and FII drive you to when the Swedish plane is waiting." "It probably won't be them."

"Then I never see my child again and my life may be at risk, too. Besides, I don't want to go to the United States Morrison looked surprised. Kallinin said, "Do you find that hard to believe? Do you want to stay in the Soviet Union?" "Of course not. My country --" He storped.

"Duer Albers," said Kallisis, "yee do tend to live in theory. Yee, people can more abore, but every nation has its enceptions. The Sevier Union will not allow a highly mained estimits with experience in miniaturization-estand fields to laws the country. Think about it and year? we that that's maconable. If do accompany yee, there will be an immediate Sevier protect

a waw claim that I have been kidaapped, and there will be a load howl from all conners of the world that I be sent back in order to avoid a crisis. Sweden will act as quickly for me as the bas for yo

'You might be in trouble for setting me out, you know.' "Why? I have official papers that will place you on the plane. I am under orders

"It might not take much money. A woman like that might do it "What?" She seemed not to have heard him.

"Ab, but for whom?" "Do you suppose she does it for Yuri? It doesn't seem blarly that he would have the meney to hire spins - or does he?"

She closed the door and locked it, walked to the opposite end of the room, and said in a low voice. "She had been out there, prohably, for gaine some time. I heard feet shuffline

lessly), and then flung it open again. No one was there

"Leaver" said Kaliinin. She closed the door, waited long enough to count to ten in a del iberate manner (her lips moving source

Morrison said, "If high-tech bugging is pass, , then I suppose there is a premium on old-fashion cavendropping."

Paleron, roldenine, looked from Kaliinin to Morrison and said between her teeth. "Perhaps I internett a tender moment."

There was silence for a moment and then Morrison said. "If it's possible that you're beset by spice. Sophia, why not come to America with me?"

"That might not save you if a scapegoat is needed. Why not just get on the plane with me, Sophia, and come to America?"

"Just like that? What would happen to my child?"

"We'll send for her afterward. "We'll send for her? What are you suggesting?"

Morrison flashed slightly. 'Tra not same. We can be friends, certainly. You'll need friends in a new country. "But it can't happen, Albert. I appreciate your kindness and concern -- or pity -- but it can't happen."

"Yos, it can. This is the twenty-first centary, not the twentisth, Sophia. People may move about freely anywhere in the world."

"But in my case, I was kidnapped."

"What do you want?" said Kaliinin tightly

"We have not asked for any." "I did not say you have. I come out of courtesy "Then go out of courtesy. And do not return."

Therefile many who will believe I was - or who might poster to believe it - and I will be sure back by the United States, as you are being sure back by the Soviet United. We're papered over, in this fashion, dozens of crises over the last six decades or wo - and in't that

"If you say, firmly and frequently, that you want to stay in the United States ---"

Konev said, "My government need not concern you, Albert. It will change its mind soon enough."

Kallinin raised her left hand as though to object, but Konev enclosed it in his. To an to concerned, Sophic, 'to an "Information at my disposibles bees internated to Mooses. It will make them think. They will go back to nee on my percent weekingh behave long and when I will them where only second Merrison, they will als action. Last sets they will have the presented percent make the OEMan set resons. I pression you fund Kallinin said in a troubled voice, "Albert!" Morrison said, "Are you getting ready to tell me that you are sorry, Sophia, that you crossed me out of existence at one word from the man you seemed to have hated?" Kallisis reddened. You are not crossed out of existence. Albert, You will be well-rested. You will work here as you would have worked in your own country, except that here you will be may appreciated." "Thank you," said Morrison, finding some small reservoir of the sardonic inside himself. "If you feel happy for me, of what importance is my feeling for myself" Patern intervend interierty. "Contrade American, you talk no much. Why do you not sit down? - Sit down." (She rashed him into a chair.) "You may as well wait onierty, since there is nothing else you can do." She then turned to Kalitein, around whose doublers. Konev's right arm was persectively placed. "And you, little Turiton," the said, "are you still planning to place this fine lower of yours cost of action that you hold this summer to menacingly in your hand? You will be able to ambrace him the more tightly if both arms are fine Paleron reached for the stanner Kallinin was holding and Kallinin care it up without a word. "Actually," said Paleron, looking carinedy at the summer, "I am relieved at having it. In the paroxyom of your newfound love, I fixed you might shoot in all directions. It would not be sale in your hands, my little one." She moved back to the vicinity of Morrison, still studying the stanger and tar Morrison stirred unasily. 'Don't point it in my direction, woman, it may go off.' Paleron looked at him hanghrily. "It will not go off if I don't want it to, Comrade American. I know how to use it." She striked in the direction of Know and Kalinin. Releved of the warrow, Kalinin new had both arms around Know's next and was kionine him with easily, entrie warrow of her live arainst his. Paleron stal in their direction, but not mally to them, for they warrow listening. T know how to use it. Like thiel And like this warrow of her live arainst his. Paleron stal in their direction, but not mally to them, for they warrow listening. T know how to use it. Like thiel And like this warrow of her live arainst his. Paleron stal in their direction, but not mally to them, for they warrow listening. T know how to use it. Like thiel And like this state area to the state of her live arainst his. Paleron stal in their direction, but not mally to them. And first Koney, then Kallinin crumpled. Paleron turned toward Morrison. 'Now help me, you idiot, we must work enickly. She said it in English. Morrison had difficulty understanding. He simply stand at her. Paleron pushed his shoulder as though she were trying to awaken him from a deep sleep. 'Come on. You grab the feet.' Merrison obeyed mechanically. First Konev and then Kallinin wen lithed onto the bod, from which Paleron had stripped the thin blankst. She structed both of them out along the narrow confines of the single mattrees, then searched Kallinen is a quick, practiced way *AA," the usid, stateg at a base of foliol paper, whose close-strptm marked is indelbly as something written is governmentors. She flipped it into the pecket of her white jacket and continued the starth. Other items came to light - a pair of stall key, for instance. Quickly the wear over over Keere, placking a small metallic doc from the intere surface of his laps "His nervous) were learning " the said and alread that way into her market Finally she retrieved a black rectangular object and said, "This is yours, ion't it?" Morrison granned. It was his computer program. He had been so far gone he had not been aware that Konev had taken it from him. He checked at it frantically now Paleren tamed Kalinia and Konev toward each other, propping them so that they would not fall apart. She then placed Konev's arm around Kalinia and covered the two with the blanket, making it in under each to help keep them in place. "Don't stars at me like that, Morrison," she said when she was done. "Come on." She seized his upper arm in a firm grip He resisted. "Where are we going? What's happening?" 'Til tell you later. Not a word now. There is no time to lose. Not a minute. Not a second. Come." She ended with soft florceness and Morrison followed her. Out of the room they went, down the stairs as softly as the could manage (he following and instanting), along the carreted corridor, and out to the limonsing. Paleron opened the from door on the passenger side with one of the keys she had obtained from Kalimin's pocket and said brasquely, "Get in." "Where are we exine?" "Get in." She virtually harled him into the limo. She settled quickly behind the wheel and Morrison resisted the impolse to ask her if she knew how to drive. It had finally goten through to his stanned mind that Paleron wasn't simply a waitrees That she had played the part of one, however, was made plain by the fairs odor of onions still clinging to her and mixing rather infeliciously with the richer and pleasanter odor of the lines's interior Paleron started the ongine, looked around the parking area, which was deserted except for a cat going about some business of its own, and moved out over a sandy patch to the path that led to the nearby read. Sorty the line tricked to meed and when it finally reached the interv-five kilometer everyour mark it was movine about a two-lane history on which, occasionally, an automobile, movine in the other direction, moved them. Morrison found himself canable of thicking normality analy. He glanced back earnestly through the rear window. A car, far behind them, was turning off at an impraction they had passed some moments before. No one appeared to be following them. Merrison then turned to watch Paleron's receille. She seemed comments but reins. It was clear to him now that due was not only no valares by me reviewion but was very likely no Seviet citizm. Her Enelish had a serons suban accent that no European would learn in whool or could risk to in a way that would be true encouch to feel He said, "You were waiting them outside the horel, reading a book, so that you would see Sophia and myself when we came "You got it," said Paleron. "You're an American agent, aren't you?" "Sheewder and sheewd "Where are we going?" "To the designated airport where the Swedish plane will pick you up. I had to get the details on that from Kalilain "And you know how to get there?" "Yes, indeed. I've been in Malenkigrad for by longer a period than your Kalinin has been here. — But self me, why did you self her this man, Konew, was in love with her? She was just waiting to hear that from a third person. She wanted it confirmed and you did that for her. In that way, you handed over the whole game to Konew. Why did you do it "For one thing " said Marrison mildly. "It was the trath " "The resth" Palaron, looking bemased, shock her hand. "You don't belong in the real world. You sure don't. I'm surprised no one knocked you on the hand and baried you long ago - just for your own good. Resides, how do you know it's the texth?" Morrison said, "I know. -- But I was sorry for her. She saved my life yesterday. She saved all our lives yesterday. For that matter, Koney saved my life, too." "You all saved each other's life, I suppose." 'Yes, as a matter of fac The far was sponsing. Today you cannot firsts and you schedult have lets youthy influences you. She would have be have all his to get would have be have all his to get would have be have all his to get would have be have been all his to get would have stirred uneasily, "How do you know all this?" Two on the floor in the back wast of this car, much to rev with you and Kallinia and to make wast the took you there. And thus you realled your damb trick. What you there to do but endy you and laree you from beine standed down, then out you back to the norm where you could have some review, and after that est hold of the summer someboar? "Thank you." "That's all risht. -- And I made them look like a lovine counie, too. Anyone comine in will be bound to say. Tacase me,' and leave exickly -- and that will sive us more time." 'How long will it be before they're conscious again?" T don't loor, it depends on how accurately 1 jacend for aduates and what and what of mind was and what income what it is don't in the iter to intere to summarize what happend. The height that it their points, the first thing they? inmember is that they in it in the. The what they do pit around to remarketing you and what it was that was the way being done with Moccow, it will be to be "Are they going to be permanently damaged?" Paleron cast a quick look at Morrison's concerned face. "You're worried about them, aren't you? Why? What are they to you?" "Well ... shipmates." Paleron made an inclogar n sound. 'I guess they'll recover okay. They might be better off if some of that supersensitive edge is ground off. They can get together and make a nice family then.' "And what's coine to harmen to you? You'd better ext on the plane with me." "Don't be a jacknow. The Strendor wouldn't take me. They've get orders to take one goy and they'l more you're to make user you're the right one. They'l have recently of your fingerprints and your retina partern, right out of the files of the Population Heard. If they take the wrong person or an additional person, that'l be a new incident and the Stredos are too smart for that. "But then what will harpen to you?" Well, for statures, Th ony you get hold of the statures and rayed them both, then hold the statures on net and made no take you to the alignet because you dubit laws its location. You ordered me to stop conside the gases, then statuand me down and toosed the statures its on the car. Early structures, Thi makes my vay heck to Malenkignd, Bio I was coming out of a structure, The status of the statures in the structure in the status of the structure in the "But Koney and Kulinin will done your story." They want holding at new when they want standing at most when they want and and and a stand at a standing. The power and at you are naturated, then anything Koney will stift them about you will do him to good. The government will accept the thit accepts, be relative to keep the whele thing - and Ti just po back "There's bound to be some suspicion clinging to you "Then we'll see," she said. "Nichevo? What will be, will be." She smiled fainfly. y continued to travel along the highway and Morrison finally said with a touch of diff ience, "Shouldn't we to speed it up a little? Nor cam be a lifensor we have " all Polence finds." We're exists at instance the another the another because the source continuer of the laboration of the l It was past noon now and Montson was beginning to feel the mild, premonitory pinches of hanger. He said, "What was it that Konev told Moscow about me, do you suppose?" Paleron shook her head. "Don't know. Whatever it was, he got a response on his personal wavelength. It signaled about twenty minutes ago. You dain't hear?" "You weakhi has long in my business. - Namally, they got no answer, so whorver. Konev was taking to in Moscow will try to find out why. Someone will find them and then they'll figure you're on the way to the airport and someone will chose out after us to see if you can be headed off. Like Plannek's charlos "We don't have Moses to part the Red Sea for us," mattered Morrison. "If we get to the airport, we'll have the Swedes. They won't give you up to anybody." "What can they do against the Soviet military?" 'to won't be the Service military. It will be some functionary, working for an extremist splitter group, who will try to Natff the Swedes. But we have official papers giving you up to them and they won't be Matfful. We just have to get these first." "And you don't think we should so faster?" Paleron shook her head firmly. Half an hour later. Paleron pointed and said. "There we are and we have the breaks. The Swedish plane is in early and has landed." She supped the car, preved a human, and the door flow open on his olds. "You go on alons. I don't want to be seen, but listen --" She kanad toward him. "My name is Addy. When you get to Washington, tell them that if they think it's time for me to get out -- I'm ready. Get hi "Tve get it." Morrison out of the car. Ninking in the sunlight. In the distance, a man in uniform -- not a Soviet uniform, as nearly as he could will -- waved him forward. Merrison broke into a run. There were no speed limits on running and though he could see no one in pursuit he would not have been surprised to see someone rise out of the ground to stop him He turned, waved a last time in the direction of the car, thought he saw an anyworing wave, and continued to run. The man who had gestured to him advanced, first at a walk, then at a run, and caught him as he all but fell forward. Monison could see now that he was wearing a European Federation uniform "May I please have your name?" said the man in English. His accent, to Montison's infinite relief, was Swedish. "Albert Jonas Morrison," he said and together they walked toward the plane and the small group waiting to check his identity Morrison sat at the plane window, same and enhanced, staring downward at the land floring cast. A knoch, consisting largely of herring and boiled potatore, had southed the inner man but scatcely the inner mind. Had the miniaturized trip through the bloodstream and brain yesterday (only yesterday?) tw im forever into a mental attitude of apprehension of imminent disaster? Would be never again be able to accept the Universe as friendly? Would be never walk through it in surme consciousness that no one and no thin Or had there memby been insufficient time for him to recover? Of course, common sense told him that there was reason not to feel cos letely safe yet. That was still Soviet earth under the plane. Was there still time for Konev's ally in Moscow, wherever he might be, to send out planes after the Swedes? Was he powerful enough to do so? Would Pharach's charites take to the air and continue the purvait? For a moment, his heart failed him when he actually saw a plane in the distance -- then another. He turned to the stawardees, who sat across the aide from him. He did not have to ask the question. She apparently read his anxious expression accumtely. 'Federation planes," she said, "as escort. We've left Soviet territory. The planes are Swedish-crewed." Then, when they passe over the English Channel, American planes joined the excert. Morrison was safe from the chariors, at any rate His mind dd not let him rest, however. Minile/? World someone actually commit an act of war? He tried to calm himself. Samly no man in the Soviet Unice, nor even the Soviet Unice, set ouldn't be. Still, it wasn't until the plane had landed on the outskirts of Washington that Morrison could allow himself to feel that it was over and that he was safely in his own country It was Saturday mernine and Morrison was recovering. He had attended to his cmanue needs. He had had breakfast and had washed. He was even martly dressed. Now he lay in bed on his back, arms behind his head. It was cloudy outside and he had only half-clarified the window because he wanted a sense of privacy. In the hon d him to make him wonder a bit if he was any better off in the United States than he had

Know looked up, his eyes brightening slightly, as though he ware bring persuaded, with difficulty, to pay attention to his captive. It was not, after all, as though he had to watch Mansion in any physical sense. The wattress, Valett Paleron, was doing that more efficiently. She wood a meter from Marsion and her eyes (conschore azended - as though he he arisyed the job) never left him.

fir i El Dunment

The doctors had finally finished their probing, the initial questions had been asked and answered, even during disner, and they had finally left him to his sleep in a room that way, in turn, inside something that resembled a formess for the depth of its security

Well, at least he didn't have to face miniaturization. There was always that thought to comfort him

The door signal flashed and Morrison mached over his head, feeling the bedboard for the button that would clarify the one-way patch on the door. He mcognized the face that appeared and puehed another contact that allowed the door to be opened from the contide

Two men entered. The one whose familiar face had been at the one-way patch said, "You remember me, I

Morrison made no more to get out of bed. He was the center now around which all revolved, at least temporarity, and he weakd take advantage of that. He simply raised his arm in casual greeting and usid, "You're the agent who wanted me to go to the Sevier Unice. Rodano, int) it?"

Trancis Rodano, yes. And this is Professor Robert G. Friar. I imagine you know him.

Morrison besized and then coarteev evene his fort off the bed and lithed him to his fort. "Hello, Preference Lineov of you, of coarse, and have seen you on boliovision often enough. The released to make your reservant accumitance."

Fitar, one of the "visible scientists" whose photographs and HV appearances had much him familiar to most of the world, smiled tiphty. He had a round face, pair blands, pairs that appearing permanent vertical create between his systems, ready checks, a study body of a verage height, and a very of looking

He said. "You, I take it, any Albert Jonas Morrison."

"That's right," said Montion easily. "Mr. Rodano will youch for me. Planes sk down, both of you, and forgive me if I continue to relax on the bod. Thave about a year's relaxation to catch up on."

The two visiters sat down on a large couch and leaned toward Merrison. Rodano unified a bit tenutively. "I car't promise you much relaxation, Dr. Morrison, At least for a while. Incidentally, we have just received word from Addby. Do you remember her?"

'The waitress who turned the tables? Yes, indeed. Without her $-^{\ast}$

"We know the essentials of the story, Morrison. She wants you to know that your two friends have recovered and are apparently fond of each other still.

"And Ashby, herself? She told me she was ready to leave if Washington thought it best. I reported that last night."

"Yes, we'll get her out one way or another. - And now I'm afraid we must bother you again."

Morrison frowned. "How long will this keep up?"

"I don't know. You must take it as it comes. -- Professor Friar, won't you take over?"

Priar nodded. "Dr. Morrison, do you mind if I take notes. -- No, let me rephrase that. I am going to take notes, Morrison."

He placked a small computer keyboard of advanced design out of his briefcase. Rodano said mildly, "Where will these notes go, Professor

"To my recording device, Mr. Rodano."

Which is where, Professor

"In my office at Defense, Mr. Rolano," Then, with some initiation under the other's continuing stam, "Into my safe in my office at Defense and both the safe and the recording device are well-coded. Does that satisfy you?"

"Proceed, Professor."

Drive numed to Merrison and said "Is it mus that you surre miniaterized Merrison. You nervenally?"

Twas. At my smallest, I was the size of an atom while part of a ship the size of a glucose molecule. I spart better than half a day inside a living human body, first in the bloodstauan, then in the brain."

"And this is true? No chance of an illusion or trickery?"

"Plans, Professor Print. H1 were tricked or hypostand, my testimory now would be worthless. We can't proceed unless you recognize the fact that I am in my right mind and can be relied on to report events that correspond reasonably well with mality.

Priar's lips pressed together and then he said, "You are right. We must make assumptions to begin with and I will assume you are same and reliable -- without projection "Of course," said Morrison.

"In that case" - and Print numed to Rodato - "we begin with one grant and important observation. Miniamizzation is possible and the Soview do indeed have it and make use of it and can miniamize even living human beings without apparent hum to them. He turned back to Morrison. "Presumably, the Serviets claim to miniaturize by reducine the size of Planck's constant."

"Yes, they do."

"Of course they do. There's no other conceivable way of doine it. Did they explain the mocedare by which that was done?"

"Cartainly not. You might as well make the assumption that the Soviets scientists I dealt with are as same as we are. They wouldn't carelessly give away anything they don't wart us to know."

*Vorv well show Assumption made. Now will us emache what harmoned to you in the Soviet Union. Do not tell it as an adventure story, but only as the observations of a professional physiciet.

Morrison began to talk. He was not entirely sorry to do so. He wanted to exercise it and he didn't want the responsibility of being the only American to know what he knew. He told the every in detail and it took hears. He did not finish until they were sitting at a lunch delivered by room service. Over desset? Friar said, "Let me summarize, then, as best I can from memory. To begin with, minimarization does not affect time flow, nor the quantum interactions. - that is, the electromagnetic, weak and strong interactions. The growinstonal interaction is affected, however, and decrease a proportion to mass, as it naturally would. Is that so?

Morrison nodded.

Priar wate on. "Light - and electromagnetic radiation, generally - cas cross into and out of the minimutation field, but sound cannot. Normal manne is weakly repelled by the minimutation field but, under passare, normal matter cas be made to enter it and be keell minimutation, at the exposes of the energy of the field.

Morrison podded again.

Prior said, "The more minimum as object becomes, the less energy is required to minimum in a further. Do you know if the energy requirement decreases in proportion to the mass manipulation at any particular stage of min

"That would certainly seem lowical," said Morrison. "but I don't recall anyone mentionine the quantitative nature of that phenomeno

To go on, then. The more minimuted an object, the gramer the chance of its openanceous deminimutization – and that refers to the emits mass within the field, rather than to any component part. You, as a sepanned individual, were more likely to deminimute openanceously than you would as part of the ship. Is that right?

"And your Soviet companions admitted that it was impossible to maximize and to make things more massive than they are in nature."

Again, that was my understanding. You must realise, Professor Priar, that I can only repart what I was told. They might have deliberately midded me or they may have been wrong because they had insufficient know "Yes yes, I understand. Do you have any reason to believe they were deliberately mideading you?"

"No. It seemed to me they were being honest."

"Well, perhaps. New, the most interesting thing to me in that Brownian motion was in balance with minimatization occillation and that the genater the degree of minimatization, the genater the delth in balance toward occillation and away from ordinary Brow

'That is an actual observation of my own, Professor, and doesn't rest merely on what I was told. "And that shift of balance has something to do with the rate of spontaneous deminiaturization

"That is my own thought. I cannot state it as fact."

Them. This opport imparts a loss of the and said, "The tranship is that all this is superficial. It tails su about the behavior of the minimumination field, but nothing about how the field is produced. - And is decrussing the values of FanceVs constant, they have the speed of light unnor

Yes, but that, as I emphasized, means that maintaining the minimultration field costs encomously in energy. If they can couple Planck's constant with the speed of light, increasing the latter as they decrease the former -- But they don't have that yet."

'So they say. It was in Shapirov's mind, supposedly, but you were unable to get it out." "That's right."

et in thought for a few minutes, then shook his hand. "We'll go over everything you've said and deduce what we can from it, but I fair it won't help."

"Why pot?" asked Rodano.

The case none of it goes to the hast. It sensore who had new own is relet or hand anything does any of its composent part was to opprint, be could does the box to be had any had links movel, bow the visit sensels, be to it does of order and to see vestil full has a pointeric brainpub veds, or what a national ratio is a pointeric brainpub veds.

The Sovie have some scheige to police de field al withow acting description was pleided soft with the policy of th

T will consult with my collesgues on the Board, but on the whole, Dr. Montoon, Tm advaid that your advenues in the Soviet Union, however during and praieworthy has - except for your confirmation that minimutation does exist - beau welces. Tm screy, Mr. Rodano, but it might se will not have happened.

"Hore ecomos that we return whick," said Morrison with some arrestire. "You know, of course, that telescope, whether ortical or radio, can be built in name over a wide area and. If they are coordinated by commune, can achieve the function of a simble laree telescope, one much lareer than can emachable be built in a simble rison."

on but not telepathy, it may be that we may win after a long period of time - or they may win. The nation that wine has, in a sense, an unlimited speed of travel and the Universe

"Fair enough," uid Rohan, risig." Will arrange that if I can and I support I can. The twenty-four hours is yours. Make the most of it. I agree that you'll have precises life time to yourself thereafter. And from now on, for quite a while, rooign yourself to bring the most ericity guarded person in America, not excluding the Provident

Ne concerning the brain than I am, but I feel he is right. He is very convincing. -- And new I have a

An axial bris much listers to the human back, wild Matricen samedy, Thecase of the fact that the askaul basis has fewer measure, less initiativy releast. The individual neuron is a table's bein may, however, not be significantly inferior to a human measure. A robot could be used as a mig-

Morrison said, "This is the situation, then, Right now, we've get a kind of crude inlepathy. Even without miniaturization, it may help us forgo ahead of the Soviets, but it may not. Without miniaturization - and without the establishment of a properly program

Some time off to begin with. Please. Ive gone through enough. Give me twenty-four hours -- from now until diametrine tensorow. Let me read, sat, think, tort, and sleep. Just one day, if you don't mind, and thermiter I will be at your service."

"The Seviets: on the other hand, have a crude form of minimuzzation. They may, in the outlinear course of investigation, find a way of linking quantum theory and relativity theory to make a trady efficient minimuzzation device, but that might take a very lose form.

Morrison's enreewion did not chanse as Priar advanced his conclusion. He roured himself a little more coffee, added cream indiciously, and drank it without hasts.

Then he said, "You're quite wrong, you know, Priar

Pitar looked up and said. "Are you tryine to up that you know somethine about the production of the miniaturization field? You had said that --

What I'm going to say, Priar, has nothing at all to do with miniaturization. It has everything to do with my own work. The Soviets took me to Mal v mind. It failed at that, which is perhaps nor surprising, considering that Shapirov was in a come and near death. On the other hand, Shapirov, who had a remarkably penetrating mind, referred to my pogram as a 'nitay entries' ather he had read some of my papers. That's what it turned out to be

"A nizy station"" Print's face took on a look of puzzled distante. "What does that mean?"

'Instead of tapping Shapizys's thought, my programmed computer, once inside one of Shapizys's neurons, was acting as a relay, passing thought from one of us to another."

Drive's expression became one of indimension. "You mean it was a televable device."

Priar said, "Let me get this ensight, Morrison. You are selling me that, as a result of your fastastic voyage into Shapirov's body, you are now certain you can so modify your device as to make telepathy practical?

Rodamo vaid. "American brains workine in tandem could, then, work out the secure of miniatarization and nethans even bear the Soviets at the task of countiant Planck's constant to the oreed of light."

Taxachy. This exprinced has when I was avere of an instance encine of low and usual doise for a young want to base disp. He and the young is down on based encine, a way on based by the set. I was not averal of any conscisses fulling of the set. I was not averal disp. He and the young is down on based by the passion herewen ham existed, proverbaleses.

Transists is an analyse. Las convisos dur las de anonzez vonebias of the same verta connection with the boais. Yew were to base of order do base of base of base of base of base of order do base of base o

Priar smiled tolerardy. "Are you sum you were in condition, on board the ship, to interpret these thoughts properly? After all, you were under tansion. Did you also receive similar thoughts from the young had

exual difference?" said Friar skeptically.

"Practical to an extent. Yes."

"Yes. But what of that?

There is a cach, though * aid Merrison. T sectioned all two experiments on animals, elactical loads from any comment into the bala. That was - aid as I use now, must be - not a self enclose. No matter how we reflexe is, we vill have only a conduct identific venum at bot. What we need is to invade a heain and these a minimated and researcy recommended comment in a searce. No matter how we reflexe is, we vill have only a conde identific venum at bot. What we need is to invade a heain and these a minimated and researcy recommended comment in a searce. No matter how we reflexe is, we vill have only a conde identific venum at bot. What we need is to invade a heain and these a minimated and researcy recommended comment.

"Nor really. The pilot of the ship, a main, received nothing at all, either from the voremo or from the other man, though on got a though. I couldn't up from when. My own fieling is that there are blain types, as there are blain types, - pithably only a fow - and that toiputific communication can be more analy established among thous of the same brain type. Merision of Late explain the Foryan Tv worked to identify the regions and patterns of abstract theory twills the human brialy with some anomatolikable seconds. Occasionably, I would cack an image, but laver interpreted that properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland the day control from the animal social transmission of the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I row endperland to the properly [Boophit 2 was coming from the animal on whose bain I van working, but I van

d computer in an animal neuron as a mlay -- we can't be sure of account

belong to it. That mation that losses will wither -- or at lasts its institutions will wither. In would be good for us if we wite the race, but it is they who may with and the process of racing may force the bankdown of two generations of an unsury prace and lead to an alid

"Interesting, if true," said Priar, obviously intrigued and as obviously unconvinced.

"Continue," said Rodano. "I'm beginning to get a feeling for this."

'So if we have telepathy but not miniatarization, and if they have miniat

"Why not, gentlemen? No one would lose. Everyone would gain."

"Do you have the time to listen to my explanation have all the time you want," said Friar

"Good," said Morrison. 'Til call for a dinner for one. Rodano and Friar had finished their own dinner. It had been an un

"What's that?" asked Rodane

"That would be an enormous thing -- if you could demonstrate it." The skepticism in Friar's voice did not disappear.

"And the poor person on whom you inflict this damage," said Prize, "will eventually explode when the device deminiaturizes.

Friar and Rodano stared at him in wonder. Friar finally said, evallowing hard, "You make it sound good, if inde

Once it was over. Rodano said. "Tell me. Dr. Priar, do you think Morrison is right in this matter of televativ/" Friar sighed and said cantiously, 'I will have to consult with some of my colleagues who are more it

"Do you think Morrison was correct as to the necessity of cooperation between the United States and the Soviet Union in this matter iir i E Domen Alland Allering Pince Allering Internet Allering Internet Allering Preses (Allering Preses (Al

Rodano interposed softly, "Even if all this is so, Dr. Morrison. What of $i \tau \gamma^*$

Yes," add Marrison enhousenicity, 'and one Strifte scientist, Yes Know, who was the depense who shared theophyse with me, caupto on to this, and 4d. 2 was for that reason that be toted to bold on to me and to my program is defined or this way government. Without me and any program, I doubt that be can deplicate my work for a long time, perhaps not for many years. This is not maily bis field

To the other bank. If we and the Soviem are willing to work cogether and, both of w, to use uliquety as refined and encemplement by antianization fully station is a bring searces, we may achieve, in combination and in a very door time, what anothers to artigravity and inflate opend. The Universe will belong to both the United States and the Soviem Universe index (), to be whele gibbs, to Each, to have analy

It took some hours for Merrison to explain his theory in densit. Then he leaned back and add, "Ps almost dimensions. New Hance that you will all yours been for a second processing of subgraphy and that that will keep me basy for - well, for the rost of my life, for all 1 know, but meshave one thing now:

 $g_{ij} = i \{ D_{ij} = min + \lambda M_{ij} = p + min + \lambda M_{ij} = 0 \ \text{for } i = p + \lambda M_{ij} = 0 \ \text{for } i = 1 \ \text{for } i = 1$

Then we adapt year of half before and. "Yee I that ha's optices, we grown, Anal's block has every device, be we call ad do brins print plan fact. Torypes will an dat. "By There s." "And for brins Will by an a. set" "Part There, so the set of a set of the mode will calculately ger that if what a ping on ad by thi faces the spin of the sets and donad has never of two the send. It may be one year, but is the od we will compare." Relate that has had had ad ad. "Re is the set on two of the mode will calculately ger that if what a ping on ad by thi faces the spin of the sets and donad has never of two the send. It may be one year, but is the od we will compare." Relate that had had had ad ad. "Re is the soft was and spin of the set of the set of the set of the sets and donad has never of two the send. It may be one year, but is the od we will compare."

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