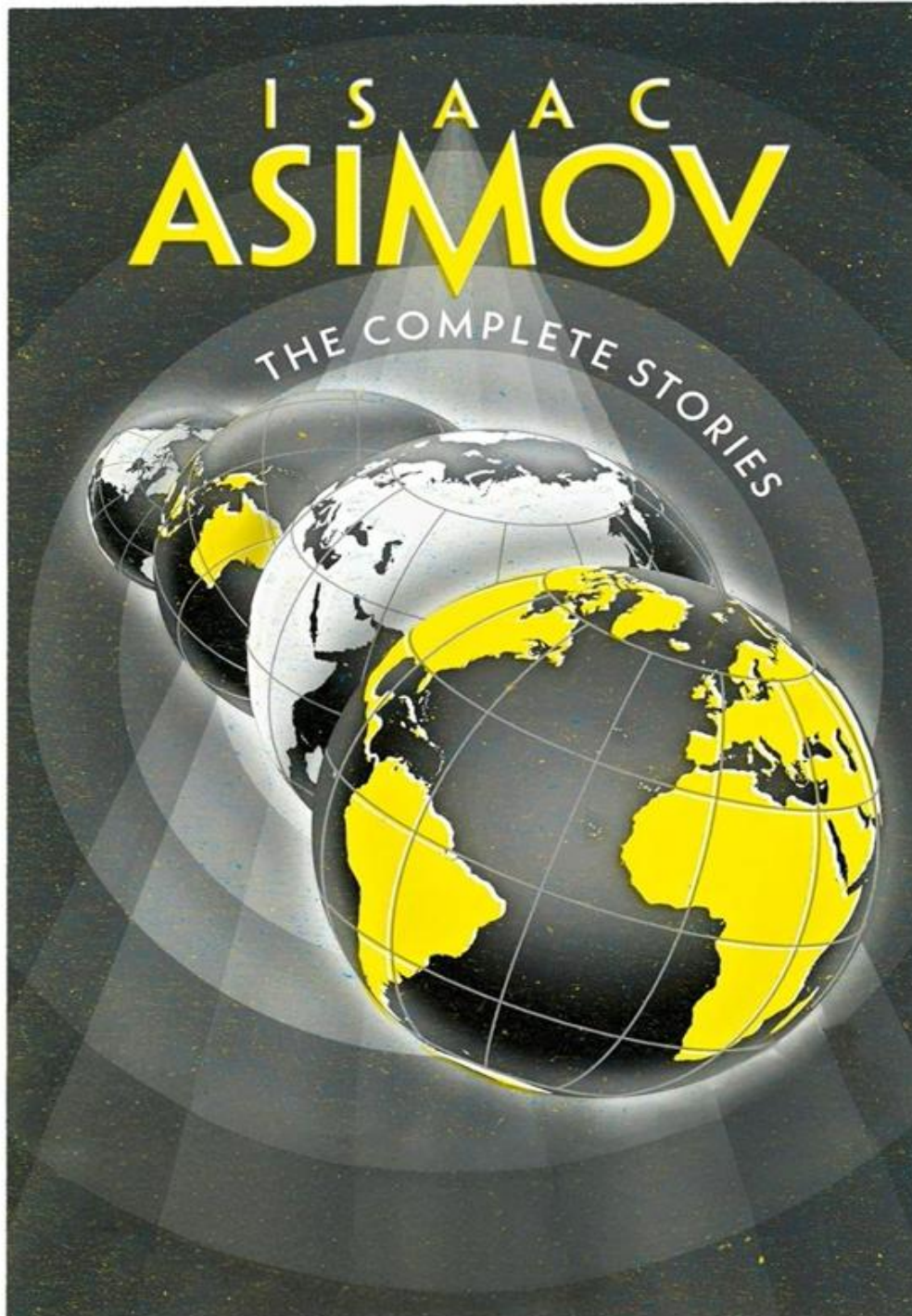


Aiming For A-Level



English Language and Literature

Isaac Asimov, short stories: an independent workbook.

When you join the Sixth Form in September, you will be studying a dystopian novel. You have already been introduced to this genre through our exploration of 'Oryx and Crake' by Margaret Atwood in the taster session on Offer Holder Day.

One of the key skills needed by students of A-level is the ability to study texts independently. This will be important for weekly lesson preparation and when completing your coursework towards the end of Year 12 and into Year 13.

This booklet aims to build up your independence by helping you to explore two dystopian short stories by Isaac Asimov. You don't need to submit your completed tasks as there are suggested answers at the end of this booklet to help you check your understanding (rather than to mark or 'grade' yourself).

There are also extension tasks if you want to challenge yourself further, and an enrichment section giving you some ideas on how you could extend your understanding if you have particularly enjoyed Asimov's short stories.

We hope you enjoy exploring these dystopian visions and look forward to seeing you in lessons when you return for Year 12

Franchise

Read the story then answer the following questions...

1. How is the Muller family made to seem very 'normal'?
2. What details create a sense of unease?
3. What is the voting system in this future world and who is excluded?
4. How is irony being used at the end of the story? What is Asimov suggesting about the future and democracy?

Extension

What different aspects of our modern society might be seen as reducing democracy?

The Dead Past

Read the story then answer the following questions...

1. According to the story, how has university education changed over the years and what caused this change?
2. What has brought Arnold and Caroline grief? How is this grief conveyed?
3. What do the men realise about the historical knowledge?
4. How are Foster's human rights removed?
5. What do the characters eventually realise a chronoscope will be used for and the effect it will have on society?

Extension

How might Asimov's ideas link to modern society?

Franchise

LINDA, AGE ten, was the only one of the family who seemed to enjoy being awake.

Norman Muller could hear her now through his own drugged, unhealthy coma. (He had finally managed to fall asleep an hour earlier but even then it was more like exhaustion than sleep.)

She was at his bedside now, shaking him. “Daddy, Daddy, wake up. Wake up!”

He suppressed a groan. “All right, Linda.”

“But, Daddy, there’s more policemen around than any time! Police cars and everything!”

Norman Muller gave up and rose blearily to his elbows. The day was beginning. It was faintly stirring toward dawn outside, the germ of a miserable gray that looked about as miserably gray as he felt. He could hear Sarah, his wife, shuffling about breakfast duties in the kitchen. His father-in-law, Matthew, was hawking strenuously in the bathroom. No doubt Agent Handley was ready and waiting for him.

This was the day.

Election Day!

To begin with, it had been like every other year. Maybe a little worse, because it was a presidential year, but no worse than other presidential years

if it came to that.

The politicians spoke about the gub-reat electorate and the vast electronic intelligence that was its servant. The press analyzed the situation with industrial computers (the New York Times and the St. Louis Post-Dispatch had their own computers) and were full of little hints as to what would be forthcoming. Commentators and columnists pinpointed the crucial state and county in happy contradiction to one another.

The first hint that it would *not* be like every other year was when Sarah Muller said to her husband on the evening of October 4 (with Election Day exactly a month off), “Cantwell Johnson says that Indiana will be the state this year. He’s the fourth one. Just think, *our* state this time.”

Matthew Hortenweiler took his fleshy face from behind the paper, stared dourly at his daughter and growled, “Those fellows are paid to tell lies. Don’t listen to them.”

“Four of them, Father,” said Sarah mildly. “They all say Indiana.”

“Indiana *is* a key state, Matthew,” said Norman, just as mildly, “on account of the Hawkins-Smith Act and this mess in Indianapolis. It-”

Matthew twisted his old face alarmingly and rasped out, “No one says Bloomington or Monroe County, do they?”

“Well-” said Norman.

Linda, whose little pointed-chinned face had been shifting from one speaker to the next, said pipingly, “You going to be voting this year, Daddy?”

Norman smiled gently and said, “I don’t think so, dear.”

But this was in the gradually growing excitement of an October in a presidential election year and Sarah had led a quiet life with dreams for her companions. She said longingly, “Wouldn’t *that* be wonderful, though?”

“If I voted?” Norman Muller had a small blond mustache that had given him a debonair quality in the young Sarah’s eyes, but which, with gradual graying, had declined merely to lack of distinction. His forehead bore deepening lines born of uncertainty and, in general, he had never seduced his clerkly soul with the thought that he was either born great or would under any circumstances achieve greatness. He had a wife, a job and a little girl, and

except under extraordinary conditions of elation or depression was inclined to consider that to be an adequate bargain struck with life.

So he was a little embarrassed and more than a little uneasy at the direction his wife's thoughts were taking. "Actually, my dear," he said, "there are two hundred million people in the country, and, with odds like that, I don't think we ought to waste our time wondering about it."

His wife said, "Why, Norman, it's no such thing like two hundred million and you know it. In the first place, only people between twenty and sixty are eligible and it's always men, so that puts it down to maybe fifty million to one. Then, if it's really Indiana—"

"Then it's about one and a quarter million to one. You wouldn't want me to bet in a horse race against those odds, now, would you? Let's have supper."

Matthew muttered from behind his newspaper, "Damned foolishness."

Linda asked again, "You going to be voting this year, Daddy?"

Norman shook his head and they all adjourned to the dining room.

By October 20, Sarah's excitement was rising rapidly. Over the coffee, she announced that Mrs. Schultz, having a cousin who was the secretary of an Assemblyman, said that all the "smart money" was on Indiana.

"She says President Villers is even going to make a speech at Indianapolis."

Norman Muller, who had had a hard day at the store, nudged the statement with a raising of eyebrows and let it go at that.

Matthew Hortenweiler, who was chronically dissatisfied with Washington, said, "If Villers makes a speech in Indiana, that means he thinks Multivac will pick Arizona. He wouldn't have the guts to go closer, the mush-head."

Sarah, who ignored her father whenever she could decently do so, said, "I don't know why they don't announce the state as soon as they can, and then the county and so on. Then the people who were eliminated could

relax.”

“If they did anything like that,” pointed out Norman, “the politicians would follow the announcements like vultures. By the time it was narrowed down to a township, you’d have a Congressman or two at every street corner.”

Matthew narrowed his eyes and brushed angrily at his sparse, gray hair. “They’re vultures, anyhow. Listen-”

Sarah murmured, “Now, Father-”

Matthew’s voice rumbled over her protest without as much as a stumble or hitch. “Listen, I was around when they set up Multivac. It would end partisan politics, they said. No more voters’ money wasted on campaigns. No more grinning nobodies high-pressured and advertising-campaigned into Congress or the White House. So what happens. More campaigning than ever, only now they do it blind. They’ll send guys to Indiana on account of the Hawkins-Smith Act and other guys to California in case it’s the Joe Hammer situation that turns out crucial. I say, wipe out all that nonsense. Back to the good old-”

Linda asked suddenly, “Don’t you want Daddy to vote this year, Grandpa?”

Matthew glared at the young girl. “Never you mind, now.” He turned back to Norman and Sarah. “There was a time I voted. Marched right up to the polling booth, stuck my fist on the levers and voted. There was nothing to it. I just said: This fellow’s my man and I’m voting for him. *That’s* the way it should be.”

Linda said excitedly, “You voted, Grandpa? You really did?”

Sarah leaned forward quickly to quiet what might easily become an incongruous story drifting about the neighborhood, “It’s nothing, Linda. Grandpa doesn’t really mean voted. Everyone did that kind of voting, your grandpa, too, but it wasn’t *really* voting.”

Matthew roared, “It wasn’t when I was a little boy. I was twenty-two and I voted for Langley and it was real voting. My vote didn’t count for much, maybe, but it was as good as anyone else’s. *Anyone* else’s. And no Multivac to-”

Norman interposed, “All right, Linda, time for bed. And stop asking

questions about voting. When you grow up, you'll understand all about it."

He kissed her with antiseptic gentleness and she moved reluctantly out of range under maternal prodding and a promise that she might watch the bedside video till 9:15, if she was prompt about the bathing ritual.

Linda said, "Grandpa," and stood with her chin down and her hands behind her back until his newspaper lowered itself to the point where shaggy eyebrows and eyes, nested in fine wrinkles, showed themselves. It was Friday, October 31.

He said, "Yes?"

Linda came closer and put both her forearms on one of the old man's knees so that he had to discard his newspaper altogether.

She said, "Grandpa, did you really once vote?"

He said, "You heard me say I did, didn't you? Do you think I tell fibs?"

"N-no, but Mamma says everybody voted then."

"So they did."

"But how could they? How could *everybody* vote?"

Matthew stared at her solemnly, then lifted her and put her on his knee.

He even moderated the tonal qualities of his voice. He said, "You see, Linda, till about forty years ago, everybody always voted. Say we wanted to decide who was to be the new President of the United States. The Democrats and Republicans would both nominate someone, and everybody would say who they wanted. When Election Day was over, they would count how many people wanted the Democrat and how many wanted the Republican. Whoever had more votes was elected. You see?"

Linda nodded and said, "How did all the people know who to vote for? Did Multivac tell them?"

Matthew's eyebrows hunched down and he looked severe. "They just

used their own judgment, girl.”

She edged away from him, and he lowered his voice again, “I’m not angry at you, Linda. But, you see, sometimes it took all night to count what everyone said and people were impatient. So they invented special machines which could look at the first few votes and compare them with the votes from the same places in previous years. That way the machine could compute how the total vote would be and who would be elected. You see?”

She nodded. “Like Multivac.”

“The first computers were much smaller than Multivac. But the machines grew bigger and they could tell how the election would go from fewer and fewer votes. Then, at last, they built Multivac and it can tell from just one voter.”

Linda smiled at having reached a familiar part of the story and said, “That’s nice.”

Matthew frowned and said, “No, it’s not nice. I don’t want a machine telling me how I would have voted just because some joker in Milwaukee says he’s against higher tariffs. Maybe I want to vote cockeyed just for the pleasure of it. Maybe I don’t want to vote. Maybe-”

But Linda had wriggled from his knee and was beating a retreat.

She met her mother at the door. Her mother, who was still wearing her coat and had not even had time to remove her hat, said breathlessly, “Run, along, Linda. Don’t get in Mother’s way.”

Then she said to Matthew, as she lifted her hat from her head and patted her hair back into place, “I’ve been at Agatha’s.”

Matthew stared at her censoriously and did not even dignify that piece of information with a grunt as he groped for his newspaper.

Sarah said, as she unbuttoned her coat, “Guess what she said?”

Matthew flattened out his newspaper for reading purposes with a sharp crackle and said, “Don’t much care.”

Sarah said, “Now, Father-” But she had no time for anger. The news i had to be told and Matthew was the only recipient handy, so she went on,

“Agatha’s Joe is a policeman, you know, and he says a whole truckload of secret service men came into Bloomington last night.”

“They’re not after me.”

“Don’t you see, Father? Secret service agents, and it’s almost election time. In *Bloomington*.”

“Maybe they’re after a bank robber.”

“There hasn’t been a bank robbery in town in ages.... Father, you’re hopeless.”

She stalked away.

Nor did Norman Muller receive the news with noticeably greater excitement.

“Now, Sarah, how did Agatha’s Joe know they were secret service agents?” he asked calmly. “They wouldn’t go around with identification cards pasted on their foreheads.”

But by next evening, with November a day old, she could say triumphantly, “It’s just everyone in Bloomington that’s waiting for someone local to be the voter. The Bloomington News as much as said so on video.”

Norman stirred uneasily. He couldn’t deny it, and his heart was sinking. If Bloomington was really to be hit by Multivac’s lightning, it would mean newspapermen, video shows, tourists, all sorts of-strange upsets. Norman liked the quiet routine of his life, and the distant stir of politics was getting uncomfortably close.

He said, “It’s all rumor. Nothing more.”

“You wait and see, then. You just wait and see.”

As things turned out, there was very little time to wait, for the doorbell rang insistently, and when Norman Muller opened it and said, “Yes?” a tall, grave-faced man said, “Are you Norman Muller?”

Norman said, “Yes,” again, but in a strange dying voice. It was not difficult to see from the stranger’s bearing that he was one carrying authority,

and the nature of his errand suddenly became as inevitably obvious as it had, until the moment before, been unthinkably impossible.

The man presented credentials, stepped into the house, closed the door behind him and said ritualistically, “Mr. Norman Muller, it is necessary for me to inform you on the behalf of the President of the United States that you have been chosen to represent the American electorate on Tuesday, November 4, 2008.”

Norman Muller managed, with difficulty, to walk unaided to his chair. He sat there, white-faced and almost insensible, while Sarah brought water, slapped his hands in panic and moaned to her husband between clenched teeth, “Don’t be sick, Norman. *Don’t* be sick. They’ll pick someone else.”

When Norman could manage to talk, he whispered, “I’m sorry, sir.”

The secret service agent had removed his coat, unbuttoned his jacket and was sitting at ease on the couch.

“It’s all right,” he said, and the mark of officialdom seemed to have vanished with the formal announcement and leave him simply a large and rather friendly man. “This is the sixth time I’ve made the announcement and I’ve seen all kinds of reactions. Not one of them was the kind you see on the video. You know what I mean? A holy, dedicated look, and a character who says, ‘It will be a great privilege to serve my country.’ That sort of stuff.” The agent laughed comfortingly.

Sarah’s accompanying laugh held a trace of shrill hysteria.

The agent said, “Now you’re going to have me with you for a while. My name is Phil Handley. I’d appreciate it if you call me Phil. Mr. Muller can’t leave the house any more till Election Day. You’ll have to inform the department store that he’s sick, Mrs. Muller. You can go about your business for a while, but you’ll have to agree not to say a word about this. Right, Mrs. Muller?”

Sarah nodded vigorously. “No, sir. Not a word.”

“All right. But, Mrs. Muller,” Handley looked grave, “we’re not kidding now. Go out only if you must and you’ll be followed when you do. I’m sorry but that’s the way we must operate.”

“Followed?”

“It won’t be obvious. Don’t worry. And it’s only for two days till the formal announcement to the nation is made. Your daughter-”

“She’s in bed,” said Sarah hastily.

“Good. She’ll have to be told I’m a relative or friend staying with the family. If she does find out the truth, she’ll have to be kept in the house. Your father had better stay in the house in any case.”

“He won’t like that,” said Sarah.

“Can’t be helped. Now, since you have no others living with you-”

“You know all about us apparently,” whispered Norman.

“Quite a bit,” agreed Handley. “In any case, those are all my instructions to you for the moment. I’ll try to cooperate as much as I can and be as little of a nuisance as possible. The government will pay for my maintenance so I won’t be an expense to you. I’ll be relieved each night by someone who will sit up in this room, so there will be no problem about sleeping accommodations. Now, Mr. Muller-”

“Sir?”

“You can call me Phil,” said the agent again. “The purpose of the two-day preliminary before formal announcement is to get you used to your position. We prefer to have you face Multivac in as normal a state of mind as possible. Just relax and try to feel this is all in a day’s work. Okay?”

“Okay,” said Norman, and then shook his head violently. “But I don’t want the responsibility. Why me?”

“All right,” said Handley, “let’s get that straight to begin with. Multivac weighs all sorts of known factors, billions of them. One factor isn’t known, though, and won’t be known for a long time. That’s the reaction pattern of the human mind. All Americans are subjected to the molding pressure of what other Americans do and say, to the things that are done to him and the things he does to others. Any American can be brought to Multivac to have the bent of his mind surveyed. From that the bent of all other minds in the country can be estimated. Some Americans are better for the purpose than others at some given time, depending upon the happenings

of that year. Multivac picked you as most representative this year. Not the smartest, or the strongest, or the luckiest, but just the most representative. Now we don't question Multivac, do we?"

"Couldn't it make a mistake?" asked Norman.

Sarah, who listened impatiently, interrupted to say, "Don't listen to him* sir. He's just nervous, you know. Actually, he's very well read and he always follows politics very closely."

Handley said, "Multivac makes the decisions, Mrs. Muller. It picked your husband."

"But does it know everything?" insisted Norman wildly. "Couldn't it have made a mistake?"

"Yes, it can. There's no point in not being frank. In 1993, a selected Voter died of a stroke two hours before it was time for him to be notified. Multivac didn't predict that; it couldn't. A Voter might be mentally unstable, morally unsuitable, or, for that matter, disloyal. Multivac can't know everything about everybody until he's fed all the data there is. That's why alternate selections are always held in readiness. I don't think we'll be using one this time. You're in good health, Mr. Muller, and you've been carefully investigated. You qualify."

Norman buried his face in his hands and sat motionless.

"By tomorrow morning, sir," said Sarah, "he'll be perfectly all right. He just has to get used to it, that's all."

"Of course," said Handley.

In the privacy of their bedchamber, Sarah Muller expressed herself in other and stronger fashion. The burden of her lecture was, "So get hold of yourself, Norman. You're trying to throw away the chance of a lifetime."

Norman whispered desperately, "It frightens me, Sarah. The whole thing."

"For goodness' sake, why? What's there to it but answering a question or two?"

"The responsibility is too great. I couldn't face it."

“What responsibility? There isn’t any. Multivac picked you. It’s Multivac’s responsibility. Everyone knows that.”

Norman sat up in bed in a sudden excess of rebellion and anguish. “Everyone is *supposed* to know that. But they don’t. They-”

“Lower your voice,” hissed Sarah icily. “They’ll hear you downtown.”

“They don’t,” said Norman, declining quickly to a whisper. “When they talk about the Ridgely administration of 1988, do they say he won them over with pie-in-the-sky promises and racist baloney? No! They talk about the ‘goddam MacComber vote,’ as though Humphrey MacComber was the only man who had anything to do with it because he faced Multivac. I’ve said it myself-only now I think the poor guy was just a truck farmer who didn’t ask to be picked. Why was it his fault more than anyone else’s? Now his name is a curse.”

“You’re just being childish,” said Sarah.

“I’m being sensible. I tell you, Sarah, I won’t accept. They can’t make me vote if I don’t want to. I’ll say I’m sick. I’ll say-”

But Sarah had had enough. “Now you listen to me,” she whispered in a cold fury. “You don’t have only yourself to think about. You know what it means to be Voter of the Year. A presidential year at that. It means publicity and fame and, maybe, buckets of money-”

“And then I go back to being a clerk.”

“You will not. You’ll have a branch managership at the least if you have any brains at all, and you will have, because I’ll tell you what to do. You control the kind of publicity if you play your cards right, and you can force Kennell Stores, Inc., into a tight contract *and* an escalator clause in connection with your salary *and* a decent pension plan.”

“That’s not the point in being Voter, Sarah.”

“That will be your point. If you don’t owe anything to yourself or to me -I’m not asking for myself-you owe something to Linda.”

Norman groaned.

“Well, don’t you?” snapped Sarah.

“Yes, dear,” murmured Norman.

On November 3, the official announcement was made and it was too late for Norman to back out even if he had been able to find the courage to make the attempt.

Their house was sealed off. Secret service agents made their appearance in the open, blocking off all approach.

At first the telephone rang incessantly, but Philip Handley with an engagingly apologetic smile took all calls. Eventually, the exchange shunted all calls directly to the police station.

Norman imagined that, in that way, he was spared not only the bubbling (and envious?) congratulations of friends, but also the egregious pressure of salesmen scenting a prospect and the designing smoothness of politicians from all over the nation.... Perhaps even death threats from the inevitable cranks.

Newspapers were forbidden to enter the house now in order to keep out weighted pressures, and television was gently but firmly disconnected, over Linda's loud protests.

Matthew growled and stayed in his room; Linda, after the first flurry of excitement, sulked and whined because she could not leave the house; Sarah divided her time between preparation of meals for the present and plans for the future; and Norman's depression lived and fed upon itself.

And the morning of Tuesday, November 4, 2008, came at last, and it was Election Day.

It was early breakfast, but only Norman Muller ate, and that mechanically. Even a shower and shave had not succeeded in either restoring him to reality or removing his own conviction that he was as grimy without as he felt grimy within.

Handley's friendly voice did its best to shed some normality over the gray and unfriendly dawn. (The weather prediction had been for a cloudy day with prospects of rain before noon.)

Handley said, "We'll keep this house insulated till Mr. Muller is back, but after that we'll be off your necks." The secret service agent was in full uniform now, including sidearms in heavily brassed holsters.

"You've been no trouble at all, Mr. Handley," simpered Sarah.

Norman drank through two cups of black coffee, wiped his lips with a napkin, stood up and said haggardly, "I'm ready."

Handley stood up, too. "Very well, sir. And thank you, Mrs. Muller, for your very kind hospitality."

The armored car purred down empty streets. They were empty even for that hour of the morning.

Handley indicated that and said, "They always shift traffic away from the line of drive ever since the attempted bombing that nearly ruined the Leverett Election of 'ninety-two."

When the car stopped, Norman was helped out by the always polite Handley into an underground drive whose walls were lined with soldiers at attention.

He was led into a brightly lit room, in which three white-uniformed men greeted him smilingly.

Norman said sharply, "But this is the hospital."

"There's no significance to that," said Handley at once. "It's just that the hospital has the necessary facilities."

"Well, what do I do?"

Handley nodded. One of the three men in white advanced and said, "I'll take over now, agent."

Handley saluted in an offhand manner and left the room.

The man in white said, "Won't you sit down, Mr. Muller? I'm John Paulson, Senior Computer. These are Samson Levine and Peter Dorogobuzh, my assistants."

Norman shook hands numbly all about. Paulson was a man of middle height with a soft face that seemed used to smiling and a very obvious toupee. He wore plastic-rimmed glasses of an old-fashioned cut, and he lit a cigarette as he talked. (Norman refused his offer of one.)

Paulson said, "In the first place, Mr. Muller, I want you to know we are in no hurry. We want you to stay with us all day if necessary, just so that you get used to your surroundings and get over any thought you might have that there is anything unusual in this, anything clinical, if you know what I mean."

"It's all right," said Norman. "I'd just as soon this were over."

"I understand your feelings. Still, we want you to know exactly what's going on. In the first place, Multivac isn't here."

"It isn't?" Somehow through all his depression, he had still looked forward to seeing Multivac. They said it was half a mile long and three stories high, that fifty technicians walked the corridors *within* its structure continuously. It was one of the wonders of the world.

Paulson smiled. "No. It's not portable, you know. It's located underground, in fact, and very few people know exactly where. You can understand that, since it is our greatest natural resource. Believe me, elections aren't the only things it's used for."

Norman thought he was being deliberately chatty and found himself intrigued all the same. "I thought I'd see it. I'd like to."

"I'm sure of that. But it takes a presidential order and even then it has to be countersigned by Security. However, we are plugged into Multivac right here by beam transmission. What Multivac says can be interpreted here and what we say is beamed directly to Multivac, so in a sense we're in its presence."

Norman looked about. The machines within the room were all meaningless to him.

"Now let me explain, Mr. Muller," Paulson went on. "Multivac already has most of the information it needs to decide all the elections, national, state and local. It needs only to check certain imponderable attitudes of mind and it will use you for that. We can't predict what questions it will ask, but they may not make much sense to you, or even to us. It may ask you

how you feel about garbage disposal in your town; whether you favor central incinerators. It might ask you whether you have a doctor of your own or whether you make use of National Medicine, Inc. Do you understand?"

"Yes, sir."

"Whatever it asks, you answer in your own words in any way you please. If you feel you must explain quite a bit, do so. Talk an hour, if necessary."

"Yes, sir."

"Now, one more thing. We will have to make use of some simple devices which will automatically record your blood pressure, heartbeat, skin conductivity and brain-wave pattern while you speak. The machinery will seem formidable, but it's all absolutely painless. You won't even know it's going on."

The other two technicians were already busying themselves with smooth-gleaming apparatus on oiled wheels.

Norman said, "Is that to check on whether I'm lying or not?"

"Not at all, Mr. Muller. There's no question of lying. It's only a matter of emotional intensity. If the machine asks you your opinion of your child's school, you may say, 'I think it is overcrowded.' Those are only words. From the way your brain and heart and hormones and sweat glands work, Multivac can judge exactly how intensely you feel about the matter. It will understand your feelings better than you yourself."

"I never heard of this," said Norman.

"No, I'm sure you didn't. Most of the details of Multivac's workings are top secret. For instance, when you leave, you will be asked to sign a paper swearing that you will never reveal the nature of the questions you were asked, the nature of your responses, what was done, or how it was done. The less is known about the Multivac, the less chance of attempted outside pressures upon the men who service it." He smiled grimly. "Our lives are hard enough as it is."

Norman nodded. "I understand."

"And now would you like anything to eat or drink?"

“No. Nothing right now.”

““Do you have any questions?””

Norman shook his head.

“Then you tell us when you’re ready.”

“I’m ready right now.”

“You’re certain?”

“Quite.”

Paulson nodded, and raised his hand in a gesture to the others. They advanced with their frightening equipment, and Norman Muller felt his breath come a little quicker as he watched.

The ordeal lasted nearly three hours, with one short break for coffee and an embarrassing session with a chamber pot. During all this time, Norman Muller remained encased in machinery. He was bone-weary at the close.

He thought sardonically that his promise to reveal nothing of what had passed would be an easy one to keep. Already the questions were a hazy mishmash in his mind.

Somehow he had thought Multivac would speak in a sepulchral, superhuman voice, resonant and echoing, but that, after all, was just an idea he had from seeing too many television shows, he now decided. The truth was distressingly undramatic. The questions were slips of a kind of metallic foil patterned with numerous punctures. A second machine converted the pattern into words and Paulson read the words to Norman, then gave him the question and let him read it for himself.

Norman’s answers were taken down by a recording machine, played back to Norman for confirmation, with emendations and added remarks also taken down. All that was fed into a pattern-making instrument and that, in turn, was radiated to Murtivac.

The one question Norman could remember at the moment was an

incongruously gossipy: "What do you think of the price of eggs?"

Now it was over, and gently they removed the electrodes from various portions of his body, unwrapped the pulsating band from his upper arm, moved the machinery away.

He stood up, drew a deep, shuddering breath and said, "Is that all? Am I through?"

"Not quite." Paulson hurried to him, smiling in reassuring fashion. "We'll have to ask you to stay another hour."

"Why?" asked Norman sharply.

"It will take that long for Multivac to weave its new data into the trillions of items it has. Thousands of elections are concerned, you know. It's very complicated. And it may be that an odd contest here or there, a comptroller-ship in Phoenix, Arizona, or some council seat in Wilkesboro, North Carolina, may be in doubt. In that case, Multivac may be compelled to ask you a deciding question or two."

"No," said Norman. "I won't go through this again."

"It probably won't happen," Paulson said soothingly. "It rarely does. But, just in case, you'll have to stay." A touch of steel, just a touch, entered his voice. "You have no choice, you know. You must."

Norman sat down wearily. He shrugged.

Paulson said, "We can't let you read a newspaper, but if you'd care for a murder mystery, or if you'd like to play chess, or if there's anything we can do for you to help pass the time, I wish you'd mention it."

"It's all right. I'll just wait."

They ushered him into a small room just next to the one in which he had been questioned. He let himself sink into a plastic-covered armchair and closed his eyes.

As well as he could, he must wait out this final hour.

He sat perfectly still and slowly the tension left him. His breathing

grew less ragged and he could clasp his hands without being quite so conscious of the trembling of his fingers.

Maybe there would be no questions. Maybe it was all over.

If it were over, then the next thing would be torchlight processions and invitations to speak at all sorts of functions. The Voter of the Year!

He, Norman Muller, ordinary clerk of a small department store in Bloomington, Indiana, who had neither been born great nor achieved greatness would be in the extraordinary position of having had greatness thrust upon him.

The historians would speak soberly of the Muller Election of 2008. That would be its name, the Muller Election.

The publicity, the better job, the flash flood of money that interested Sarah so much, occupied only a corner of his mind. It would all be welcome, of course. He couldn't refuse it. But at the moment something else was beginning to concern him.

A latent patriotism was stirring. After all, he was representing the entire electorate. He was the focal point for them. He was, in his own person, for this one day, all of America!

The door opened, snapping him to open-eyed attention. For a moment, his stomach constricted. Not more questions!

But Paulson was smiling. "That will be all, Mr. Muller."

"No more questions, sir?"

"None needed. Everything was quite clear-cut. You will be escorted back to your home and then you will be a private citizen once more. Or as much so as the public will allow."

"Thank you. Thank you." Norman flushed and said, "I wonder-who was elected?"

Paulson shook his head. "That will have to wait for the official announcement. The rules are quite strict. We can't even tell you. You understand."

“Of course. Yes.” Norman felt embarrassed.

“Secret service will have the necessary papers for you to sign.”

“Yes.” Suddenly, Norman Muller felt proud. It was on him now in full strength. He was proud.

In this imperfect world, the sovereign citizens of the first and greatest Electronic Democracy had, through Norman Muller (through *him!*) exercised once again its free, untrammelled franchise.

The Dead Past

Arnold Potterley, Ph.D., was a Professor of Ancient History. That, in itself, was not dangerous. What changed the world beyond all dreams was the fact that he looked like a Professor of Ancient History.

Thaddeus Araman, Department Head of the Division of Chronoscopy, might have taken proper action if Dr. Potterley had been owner .of a large, square chin, flashing eyes, aquiline nose and broad shoulders.

As it was, Thaddeus Araman found himself staring over his desk at a mild-mannered individual, whose faded blue eyes looked at him wistfully from either side of a low-bridged button nose; whose small, neatly dressed figure seemed stamped “milk-and-water” from thinning brown hair to the neatly brushed shoes that completed a conservative middle-class costume.

Araman said pleasantly, “And now what can I do for you, Dr. Potterley?”

Dr. Potterley said in a soft voice that went well with the rest of him, “Mr. Araman, I came to you because you’re top man in chronoscopy.”

Araman smiled. “Not exactly. Above me is the World Commissioner of Research and above him is the Secretary-General of the United Nations. And above both of them, of course, are the sovereign peoples of Earth.”

Dr. Potterley shook his head. “They’re not interested in chronoscopy. I’ve come to you, sir, because for two years I have been trying to obtain permission to do some time viewing-chronoscopy, that is-in connection with my researches on ancient Carthage. I can’t obtain such permission. My research grants are all proper. There is no irregularity in any of my intellectual endeavors and yet-”

“I’m sure there is no question of irregularity,” said Araman soothingly. He flipped the thin reproduction sheets in the folder to which Potterley’s name had been attached. They had been produced by Multivac, whose vast analogical mind kept all the department records. When this was over, the

sheets could be destroyed, then reproduced on demand in a matter of minutes.

And while Araman turned the pages, Dr. Potterley's voice continued in a soft monotone.

The historian was saying, "I must explain that my problem is quite an important one. Carthage was ancient commercialism brought to its zenith. Pre-Roman Carthage was the nearest ancient analogue to pre-atomic America, at least insofar as its attachment to trade, commerce and business in general was concerned. They were the most daring seamen and explorers before the Vikings; much better at it than the overrated Greeks.

"To know Carthage would be very rewarding, yet the only knowledge we have of it is derived from the writings of its bitter enemies, the Greeks and Romans. Carthage itself never wrote in its own defense or, if it did, the books did not survive. As a result, the Carthaginians have been one of the favorite sets of villains of history and perhaps unjustly so. Time viewing may set the record straight."

He said much more.

Araman said, still turning the reproduction sheets before him, "You must realize, Dr. Potterley, that chronoscopy, or time viewing, if you prefer, is a difficult process."

Dr. Potterley, who had been interrupted, frowned and said, "I am asking for only certain selected views at times and places I would indicate."

Araman sighed. "Even a few views, even one ... It is an unbelievably delicate art. There is the question of focus, getting the proper scene in view and holding it. There is the synchronization of sound, which calls for completely independent circuits."

"Surely my problem is important enough to justify considerable effort."

"Yes, sir. Undoubtedly," said Araman at once. To deny the importance of someone's research problem would be unforgivably bad manners. "But you must understand how long-drawn-out even the simplest view is. And there is a long waiting line for the chronoscope and an even longer waiting line for the use of Multivac which guides us in our use of the controls."

Potterley stirred unhappily. "But can nothing be done? For two years--"

“A matter of priority, sir. I’m sorry. . . . Cigarette?”

The historian started back at the suggestion, eyes suddenly widening as he stared at the pack thrust out toward him. Araman looked surprised, withdrew the pack, made a motion as though to take a cigarette for himself and thought better of it.

Potterley drew a sigh of unfeigned relief as the pack was put out of sight.

He said, “Is there any way of reviewing matters, putting me as far forward as possible. I don’t know how to explain-”

Araman smiled. Some had offered money under similar circumstances which, of course, had gotten them nowhere, either. He said, “The decisions on priority are computer-processed. I could in no way alter those decisions arbitrarily.”

Potterley rose stiffly to his feet. He stood five and a half feet tall. “Then, good day, sir.”

“Good day, Dr. Potterley. And my sincerest regrets.”

He offered his hand and Potterley touched it briefly.

The historian left, and a touch of the buzzer brought Araman’s secretary into the room. He handed her the folder.

“These,” he said, “may be disposed of.”

Alone again, he smiled bitterly. Another item in his quarter-century’s service to the human race. Service through negation.

At least this fellow had been easy to dispose of. Sometimes academic pressure had to be applied and even withdrawal of grants.

Five minutes later, he had forgotten Dr. Potterley. Nor, thinking back on it later, could he remember feeling any premonition of danger.

During the first year of his frustration, Arnold Potterley had experienced only that-frustration. During the second year, though, his frustration gave birth to an idea that first frightened and then fascinated him. Two things stopped him from trying to translate the idea into action, and

neither barrier was the undoubted fact that his notion was a grossly unethical one.

The first was merely the continuing hope that the government would finally give its permission and make it unnecessary for him to do anything more. That hope had perished finally in the interview with Araman just completed.

The second barrier had been not a hope at all but a dreary realization of his own incapacity. He was not a physicist and he knew no physicists from whom he might obtain help. The Department of Physics at the university consisted of men well stocked with grants and well immersed in specialty. At best, they would not listen to him. At worst, they would report him for intellectual anarchy and even his basic Carthaginian grant might easily be withdrawn.

That he could not risk. And yet chronoscopy was the only way to carry on his work. Without it, he would be no worse off if his grant were lost.

The first hint that the second barrier might be overcome had come a week earlier than his interview with Araman, and it had gone unrecognized at the time. It had been at one of the faculty teas. Potterley attended these sessions unfailingly because he conceived attendance to be a duty, and he took his duties seriously. Once there, however, he conceived it to be no responsibility of his to make light conversation or new friends. He sipped abstemiously at a drink or two, exchanged a polite word with the dean or such department heads as happened to be present, bestowed a narrow smile on others and finally left early.

Ordinarily, he would have paid no attention, at that most recent tea, to a young man standing quietly, even diffidently, in one corner. He would never have dreamed of speaking to him. Yet a tangle of circumstance persuaded him this once to behave in a way contrary to his nature.

That morning at breakfast, Mrs. Potterley had announced somberly that once again she had dreamed of Laurel; but this time a Laurel grown up, yet retaining the three-year-old face that stamped her as their child. Potterley had let her talk. There had been a time when he fought her too frequent preoccupation with the past and death. Laurel would not come back to them, either through dreams or through talk. Yet if it appeared Caroline Potterley-let her dream and talk.

But when Potterley went to school that morning, he found himself for

once affected by Caroline's inanities. Laurel grown up! She had died nearly twenty years ago; their only child, then and ever. In all that time, when he thought of her, it was as a three-year-old.

Now he thought: But if she were alive now, she wouldn't be three, she'd be nearly twenty-three.

Helplessly, he found himself trying to think of Laurel as growing progressively older; as finally becoming twenty-three. He did not quite succeed.

Yet he tried. Laurel using make-up. Laurel going out with boys. Laurel- getting married!

So it was that when he saw the young man hovering at the outskirts of the coldly circulating group of faculty men, it occurred to him quixotically that, for all he knew, a youngster just such as this might have married Laurel. That youngster himself, perhaps. . . .

Laurel might have met him, here at the university, or some evening when he might be invited to dinner at the Potterleys'. They might grow interested in one another. Laurel would surely have been pretty and this youngster looked well. He was dark in coloring, with a lean intent face and an easy carriage.

The tenuous daydream snapped, yet Potterley found himself staring foolishly at the young man, not as a strange face but as a possible son-in-law in the might-have-been. He found himself threading his way toward the man. It was almost a form of autohypnotism.

He put out his hand. "I am Arnold Potterley of the History Department. You're new here, I think?"

The youngster looked faintly astonished and fumbled with his drink, shifting it to his left hand in order to shake with his right. "Jonas Foster is my name, sir. I'm a new instructor in physics. I'm just starting this semester."

Potterley nodded. "I wish you a happy stay here and great success."

That was the end of it, then. Potterley had come uneasily to his senses, found himself embarrassed and moved off. He stared back over his shoulder once, but the illusion of relationship had gone. Reality was quite real once more and he was angry with himself for having fallen prey to his wife's

foolish talk about Laurel.

But a week later, even while Araman was talking, the thought of that young man had come back to him. An instructor in physics. A new instructor. Had he been deaf at the time? Was there a short circuit between ear and brain? Or was it an automatic self-censorship because of the impending interview with the Head of Chronoscopy?

But the interview failed, and it was the thought of the young man with whom he had exchanged two sentences that prevented Potterley from elaborating his pleas for consideration. He was almost anxious to get away.

And in the autogiro express back to the university, he could almost wish he were superstitious. He could then console himself with the thought that the casual meaningless meeting had really been directed by a knowing and purposeful Fate.

Jonas Foster was not new to academic life. The long and rickety struggle for the doctorate would make anyone a veteran. Additional work as a postdoctorate teaching fellow acted as a booster shot.

But now he was Instructor Jonas Foster. Professorial dignity lay ahead. And he now found himself in a new sort of relationship toward other professors.

For one thing, they would be voting on future promotions. For another, he was in no position to tell so early in the game which particular member of the faculty might or might not have the ear of the dean or even of the university president. He did not fancy himself as a campus politician and was sure he would make a poor one, yet there was no point in kicking his own rear into blisters just to prove that to himself.

So Foster listened to this mild-mannered historian who, in some vague way, seemed nevertheless to radiate tension, and did not shut him up abruptly and toss him out. Certainly that was his first impulse.

He remembered Potterley well enough. Potterley had approached him at that tea (which had been a grizzly affair). The fellow had spoken two sentences to him stiffly, somehow glassy-eyed, had then come to himself with a visible start and hurried off.

It had amused Foster at the time, but now . . .

Potterley might have been deliberately trying to make his acquaintance, or, rather, to impress his own personality on Foster as that of a queer sort of duck, eccentric but harmless. He might now be probing Foster's views, searching for unsettling opinions. Surely, they ought to have done so before granting him his appointment. Still . . .

Potterley might be serious, might honestly not realize what he was doing.

Or he might realize quite well what he was doing; he might be nothing more or less than a dangerous rascal.

Foster mumbled, "Well, now-" to gain time, and fished out a package of cigarettes, intending to offer one to Potterley and to light it and one for himself very slowly.

But Potterley said at once, "Please, Dr. Foster. No cigarettes."

Foster looked startled. "I'm sorry, sir."

"No. The regrets are mine. I cannot stand the odor. An idiosyncrasy. I'm sorry."

He was positively pale. Foster put away the cigarettes.

Foster, feeling the absence of the cigarette, took the easy way out. "I'm flattered that you ask my advice and all that, Dr. Potterley, but I'm not a neutrinics man. I can't very well do anything professional in that direction. Even stating an opinion would be out of line, and, frankly, I'd prefer that you didn't go into any particulars."

The historian's prim face set hard. "What do you mean, you're not a neutrinics man? You're not anything yet. You haven't received any grant, have you?"

"This is only my first semester."

"I know that. I imagine you haven't even applied for any grant yet."

Foster half-smiled. In three months at the university, he had not succeeded in putting his initial requests for research grants into good enough shape to pass on to a professional science writer, let alone to the Research Commission.

(His Department Head, fortunately, took it quite well. “Take your time now, Foster,” he said, “and get your thoughts well organized. Make sure you know your path and where it will lead, for, once you receive a grant, your specialization will be formally recognized and, for better or for worse, it will be yours for the rest of your career.” The advice was trite enough, but triteness has often the merit of truth, and Foster recognized that.)

Foster said, “By education and inclination, Dr. Potterley, I’m a hyperoptics man with a gravities minor. It’s how I described myself in applying for this position. It may not be my official specialization yet, but it’s going to be. It can’t be anything else. As for neutrinics, I never even studied the subject.”

“Why not?” demanded Potterley at once.

Foster stared. It was the kind of rude curiosity about another man’s professional status that was always irritating. He said, with the edge of his own politeness just a trifle blunted, “A course in neutrinics wasn’t given at my university.”

“Good Lord, where did you go?”

“M.I.T.,” said Foster quietly.

“And they don’t teach neutrinics?”

“No, they don’t.” Foster felt himself flush and was moved to a defense.

“It’s a highly specialized subject with no great value. Chronoscopy, perhaps, has some value, but it is the only practical application and that’s a dead end.”

The historian stared at him earnestly. “Tell me this. Do you know where I can find a neutrinics man?”

“No, I don’t,” said Foster bluntly.

“Well, then, do you know a school which teaches neutrinics?”

“No, I don’t.”

Potterley smiled tightly and without humor.

Foster resented that smile, found he detected insult in it and grew sufficiently annoyed to say, "I would like to point out, sir, that you're stepping out of line."

"What?"

"I'm saying that, as a historian, your interest in any sort of physics, your professional interest, is—" He paused, unable to bring himself quite to say the word.

"Unethical?"

"That's the word, Dr. Potterley."

"My researches have driven me to it," said Potterley in an intense whisper.

"The Research Commission is the place to go. If they permit—"

"I have gone to them and have received no satisfaction."

"Then obviously you must abandon this." Foster knew he was sounding stuffily virtuous, but he wasn't going to let this man lure him into an expression of intellectual anarchy. It was too early in his career to take stupid risks.

Apparently, though, the remark had its effect on Potterley. Without any warning, the man exploded into a rapid-fire verbal storm of irresponsibility.

Scholars, he said, could be free only if they could freely follow their own free-swinging curiosity. Research, he said, forced into a predesigned pattern by the powers that held the purse strings became slavish and had to stagnate. No man, he said, had the right to dictate the intellectual interests of another.

Foster listened to all of it with disbelief. None of it was strange to him. He had heard college boys talk so in order to shock their professors and he had once or twice amused himself in that fashion, too. Anyone who studied the history of science knew that many men had once thought so.

Yet it seemed strange to Foster, almost against nature, that a modern man of science could advance such nonsense. No one would advocate running

a factory by allowing each individual worker to do whatever pleased him at the moment, or of running a ship according to the casual and conflicting notions of each individual crewman. It would be taken for granted that some sort of centralized supervisory agency must exist in each case. Why should direction and order benefit a factory and a ship but not scientific research?

People might say that the human mind was somehow qualitatively different from a ship or factory but the history of intellectual endeavor proved the opposite.

When science was young and the intricacies of all or most of the known was within the grasp of an individual mind, there was no need for direction, perhaps. Blind wandering over the uncharted tracts of ignorance could lead to wonderful finds by accident.

But as knowledge grew, more and more data had to be absorbed before worthwhile journeys into ignorance could be organized. Men had to specialize. The researcher needed the resources of a library he himself could not gather, then of instruments he himself could not afford. More and more, the individual researcher gave way to the research team and the research institution.

The funds necessary for research grew greater as tools grew more numerous. What college was so small today as not to require at least one nuclear micro-reactor and at least one three-stage computer?

Centuries before, private individuals could no longer subsidize research. By 1940, only the government, large industries and large universities or research institutions could properly subsidize basic research.

By 1960, even the largest universities depended entirely upon government grants, while research institutions could not exist without tax concessions and public subscriptions. By 2000, the industrial combines had become a branch of the world government and, thereafter, the financing of research and therefore its direction naturally became centralized under a department of the government.

It all worked itself out naturally and well. Every branch of science was fitted neatly to the needs of the public, and the various branches of science were co-ordinated decently. The material advance of the last half-century was argument enough for the fact that science was not falling into stagnation.

Foster tried to say a very little of this and was waved aside impatiently

by Potterley who said, “You are parroting official propaganda. You’re sitting in the middle of an example that’s squarely against the official view. Can you believe that?”

“Frankly, no.”

“Well, why do you say time viewing is a dead end? Why is neutrinics unimportant? You say it is. You say it categorically. Yet you’ve never studied it. You claim complete ignorance of the subject. It’s not even given in your school-”

“Isn’t the mere fact that it isn’t given proof enough?”

“Oh, I see. It’s not given because it’s unimportant. And it’s unimportant because it’s not given. Are you satisfied with that reasoning?”

Foster felt a growing confusion. “It’s in the books.”

“That’s all. The books say neutrinics is unimportant. Your professors tell you so because they read it in the books. The books say so because professors write them. Who says it from personal experience and knowledge? Who does research in it? Do you know of anyone?”

Foster said, “I don’t see that we’re getting anywhere, Dr. Potterley. I have work to do-”

“One minute. I just want you to try this on. See how it sounds to you. I say the government is actively suppressing basic research in neutrinics and chronoscopy. They’re suppressing application of chronoscopy.”

“Oh, no.”

“Why not? They could do it. There’s your centrally directed research. If they refuse grants for research in any portion of science, that portion dies. They’ve killed neutrinics. They can do it and have done it.”

“But why?”

“I don’t know why. I want you to find out. I’d do it myself if I knew enough. I came to you because you’re a young fellow with a brand-new education. Have your intellectual arteries hardened already? Is there no curiosity in you? Don’t you want to know? Don’t you want answers?”

The historian was peering intently into Foster's face. Their noses were only inches apart, and Foster was so lost that he did not think to draw back.

He should, by rights, have ordered Potterley out. If necessary, he should have thrown Potterley out.

It was not respect for age and position that stopped him. It was certainly not that Potterley's arguments had convinced him. Rather, it was a small point of college pride.

Why didn't M.I.T. give a course in neutrinics? For that matter, now that he came to think of it, he doubted that there was a single book on neutrinics in the library. He could never recall having seen one.

He stopped to think about that.

And that was ruin.

Caroline Potterley had once been an attractive woman. There were occasions, such as dinners or university functions, when, by considerable effort, remnants of the attraction could be salvaged.

On ordinary occasions, she sagged. It was the word she applied to herself in moments of self-aborrence. She had grown plumper with the years, but the flaccidity about her was not a matter of fat entirely. It was as though her muscles had given up and grown limp so that she shuffled when she walked, while her eyes grew baggy and her cheeks jowly. Even her graying hair seemed tired rather than merely stringy. Its straightness seemed to be the result of a supine surrender to gravity, nothing else.

Caroline Potterley looked at herself in the mirror and admitted this was one of her bad days. She knew the reason, too.

It had been the dream of Laurel. The strange one, with Laurel grown up. She had been wretched ever since.

Still, she was sony she had mentioned it to Arnold. He didn't say anything; he never did any more; but it was bad for him. He was particularly withdrawn for days afterward. It might have been that he was getting ready for that important conference with the big government official (he kept saying he expected no success), but it might also have been her dream.

It was better in the old days when he would cry sharply at her, "Let the

dead past go, Caroline! Talk won't bring her back, and dreams won't either."

It had been bad for both of them. Horribly bad. She had been away from home and had lived in guilt ever since. If she had stayed at home, if she had not gone on an unnecessary shopping expedition, there would have been two of them available. One would have succeeded in saving Laurel.

Poor Arnold had not managed. Heaven knew he tried. He had nearly died himself. He had come out of the burning house, staggering in agony, blistered, choking, half-blinded, with the dead Laurel in his arms.

The nightmare of that lived on, never lifting entirely.

Arnold slowly grew a shell about himself afterward. He cultivated a low-voiced mildness through which nothing broke, no lightning struck. He grew puritanical and even abandoned his minor vices, his cigarettes, his penchant for an occasional profane exclamation. He obtained his grant for the preparation of a new history of Carthage and subordinated everything to that.

She tried to help him. She hunted up his references, typed his notes and microfilmed them. Then that ended suddenly.

She ran from the desk suddenly one evening, reaching the bathroom in bare time and retching abominably. Her husband followed her in confusion and concern.

"Caroline, what's wrong?"

It took a drop of brandy to bring her around. She said, "Is it true? What they did?"

"Who did?"

"The Carthaginians."

He stared at her and she got it out by indirection. She couldn't say it right out.

The Carthaginians, it seemed, worshiped Moloch, in the form of a hollow, brazen idol with a furnace in its belly. At times of national crisis, the priests and the people gathered, and infants, after the proper ceremonies and invocations, were dextrously hurled, alive, into the flames.

They were given sweetmeats just before the crucial moment, in order that the efficacy of the sacrifice not be ruined by displeasing cries of panic. The drums rolled just after the moment, to drown out the few seconds of infant shrieking. The parents were present, presumably gratified, for the sacrifice was pleasing to the gods. . . .

Arnold Potterley frowned darkly. Vicious lies, he told her, on the part of Carthage's enemies. He should have warned her. After all, such propagandistic lies were not uncommon. According to the Greeks, the ancient Hebrews worshiped an ass's head in their Holy of Holies. According to the Romans, the primitive Christians were haters of all men who sacrificed pagan children in the catacombs.

"Then they didn't do it?" asked Caroline.

"I'm sure they didn't. The primitive Phoenicians may have. Human sacrifice is commonplace in primitive cultures. But Carthage in her great days was not a primitive culture. Human sacrifice often gives way to symbolic actions such as circumcision. The Greeks and Romans might have mistaken some Carthaginian symbolism for the original full rite, either out of ignorance or out of malice."

"Are you sure?"

"I can't be sure yet, Caroline, but when I've got enough evidence, I'll apply for permission to use chronoscopy, which will settle the matter once and for all."

"Chronoscopy?"

"Time viewing. We can focus on ancient Carthage at some time of crisis, the landing of Scipio Africanus in 202 b.c., for instance, and see with our own eyes exactly what happens. And you'll see, I'll be right."

He patted her and smiled encouragingly, but she dreamed of Laurel every night for two weeks thereafter and she never helped him with his Carthage project again. Nor did he ever ask her to.

But now she was bracing herself for his coming. He had called her after arriving back in town, told her he had seen the government man and that it had gone as expected. That meant failure, and yet the little telltale sign of depression had been absent from his voice and his features had appeared quite composed in the teleview. He had another errand to take care of, he said,

before coming home.

It meant he would be late, but that didn't matter. Neither one of them was particular about eating hours or cared when packages were taken out of the freezer or even which packages or when the selfwarming mechanism was activated.

When he did arrive, he surprised her. There was nothing untoward about him in any obvious way. He kissed her dutifully and smiled, took off his hat and asked if all had been well while he was gone. It was all almost perfectly normal. Almost.

She had learned to detect small things, though, and his pace in all this was a trifle hurried. Enough to show her accustomed eye that he was under tension.

She said, "Has something happened?"

He said, "We're going to have a dinner guest night after next, Caroline. You don't mind?"

"Well, no. Is it anyone I know?"

"No. A young instructor. A newcomer. I've spoken to him." He suddenly whirled toward her and seized her arms at the elbow, held them a moment, then dropped them in confusion as though disconcerted at having shown emotion.

He said, "I almost didn't get through to him. Imagine that. Terrible, terrible, the way we have all bent to the yoke; the affection we have for the harness about us."

Mrs. Potterley wasn't sure she understood, but for a year she had been watching him grow quietly more rebellious; little by little more daring in his criticism of the government. She said, "You haven't spoken foolishly to him, have you?"

"What do you mean, foolishly? He'll be doing some neutrinics for me."

"Neutrینics" was trisyllabic nonsense to Mrs. Potterley, but she knew it had nothing to do with history. She said faintly, "Arnold, I don't like you to do that. You'll lose your position. It's—"

“It’s intellectual anarchy, my dear,” he said. “That’s the phrase you want. Very well. I am an anarchist. If the government will not allow me to push my researches, I will push them on my own. And when I show the way, others will follow. . . . And if they don’t, it makes no difference. It’s Carthage that counts and human knowledge, not you and I.”

“But you don’t know this young man. What if he is an agent for the Commission of Research.”

“Not likely and I’ll take that chance.” He made a fist of his right hand and rubbed it gently against the palm of his left. “He’s on my side now. I’m sure of it. He can’t help but be. I can recognize intellectual curiosity when I see it in a man’s eyes and face and attitude, and it’s a fatal disease for a tame scientist. Even today it takes time to beat it out of a man and the young ones are vulnerable. . . . Oh, why stop at anything? Why not build our own chronoscope and tell the government to go to-”

He stopped abruptly, shook his head and turned away.

“I hope everything will be all right,” said Mrs. Potterley, feeling helplessly certain that everything would not be, and frightened, in advance, for her husband’s professorial status and the security of their old age.

It was she alone, of them all, who had a violent presentiment of trouble. Quite the wrong trouble, of course.

Jonas Foster was nearly half an hour late in arriving at the Potterleys’ off-campus house. Up to that very evening, he had not quite decided he would go. Then, at the last moment, he found he could not bring himself to commit the social enormity of breaking a dinner appointment an hour before the appointed time. That, and the nagging of curiosity.

The dinner itself passed interminably. Foster ate without appetite. Mrs. Potterley sat in distant absent-mindedness, emerging out of it only once to ask if he were married and to make a deprecating sound at the news that he was not. Dr. Potterley himself asked neutrally after his professional history and nodded his head primly.

It was as staid, stodgy-boring, actually-as anything could be.

Foster thought: He seems so harmless.

Foster had spent the last two days reading up on Dr. Potterley. Very

casually, of course, almost sneakily. He wasn't particularly anxious to be seen in the Social Science Library. To be sure, history was one of those borderline affairs and historical works were frequently read for amusement or edification by the general public.

Still, a physicist wasn't quite the "general public." Let Foster take to reading histories and he would be considered queer, sure as relativity, and after a while the Head of the Department would wonder if his new instructor were really "the man for the job."

So he had been cautious. He sat in the more secluded alcoves and kept his head bent when he slipped in and out at odd hours.

Dr. Potterley, it turned out, had written three books and some dozen articles on the ancient Mediterranean worlds, and the later articles (all in "Historical Reviews") had all dealt with pre-Roman Carthage from a sympathetic viewpoint.

That, at least, checked with Potterley's story and had soothed Foster's suspicions somewhat. . . . And yet Foster felt that it would have been much wiser, much safer, to have scotched the matter at the beginning.

A scientist shouldn't be too curious, he thought in bitter dissatisfaction with himself. It's a dangerous trait.

After dinner, he was ushered into Potterley's study and he was brought up sharply at the threshold. The walls were simply lined with books.

Not merely films. There were films, of course, but these were far outnumbered by the books—print on paper. He wouldn't have thought so many books would exist in usable condition.

That bothered Foster. Why should anyone want to keep so many books at home? Surely all were available in the university library, or, at the very worst, at the Library of Congress, if one wished to take the minor trouble of checking out a microfilm.

There was an element of secrecy involved in a home library. It breathed of intellectual anarchy. That last thought, oddly, calmed Foster. He would rather Potterley be an authentic anarchist than a play-acting agent provocateur.

And now the hours began to pass quickly and astonishingly.

“You see,” Potterley said, in a clear, unflurried voice, “it was a matter of finding, if possible, anyone who had ever used chronoscopy in his work. Naturally, I couldn’t ask baldly, since that would be unauthorized research.”

“Yes,” said Foster dryly. He was a little surprised such a small consideration would stop the man.

“I used indirect methods-”

He had. Foster was amazed at the volume of correspondence dealing with small disputed points of ancient Mediterranean culture which somehow managed to elicit the casual remark over and over again: “Of course, having never made use of chronoscopy-” or, “Pending approval of my request for chronoscopic data, which appear unlikely at the moment-”

“Now these aren’t blind questionings,” said Potterley. “There’s a monthly booklet put out by the Institute for Chronoscopy in which items concerning the past as determined by time viewing are printed. Just one or two items.

“What impressed me first was the triviality of most of the items, their insipidity. Why should such researches get priority over my work? So I wrote to people who would be most likely to do research in the directions described in the booklet. Uniformly, as I have shown you, they did not make use of the chronoscope. Now let’s go over it point by point.”

At last Foster, his head swimming with Potterley’s meticulously gathered details, asked, “But why?”

“I don’t know why,” said Potterley, “but I have a theory. The original invention of the chronoscope was by Sterbinski-you see, I know that much - and it was well publicized. But then the government took over the instrument and decided to suppress further research in the matter or any use of the machine. But then, people might be curious as to why it wasn’t being used. Curiosity is such a vice, Dr. Foster.”

Yes, agreed the physicist to himself.

“Imagine the effectiveness, then,” Potterley went on, “of pretending that the chronoscope was being used. It would then be not a mystery, but a commonplace. It would no longer be a fitting object for legitimate curiosity or an attractive one for illicit curiosity.”

“You were curious,” pointed out Foster.

Potterley looked a trifle restless. “It was different in my case,” he said angrily. “I have something that must be done, and I wouldn’t submit to the ridiculous way in which they kept putting me off.”

A bit paranoid, too, thought Foster gloomily.

Yet he had ended up with something, paranoid or not. Foster could no longer deny that something peculiar was going on in the matter of neutrinos.

But what was Potterley after? That still bothered Foster. If Potterley didn’t intend this as a test of Foster’s ethics, what did he want?

Foster put it to himself logically. If an intellectual anarchist with a touch of paranoia wanted to use a chronoscope and was convinced that the powers-that-be were deliberately standing in his way, what would he do?

Supposing it were I, he thought. What would I do?

He said slowly, “Maybe the chronoscope doesn’t exist at all?”

Potterley started. There was almost a crack in his general calmness. For an instant, Foster found himself catching a glimpse of something not at all calm.

But the historian kept his balance and said, “Oh, no, there must be a chronoscope.”

“Why? Have you seen it? Have I? Maybe that’s the explanation of everything. Maybe they’re not deliberately holding out on a chronoscope they’ve got. Maybe they haven’t got it in the first place.”

“But Sterbinski lived. He built a chronoscope. That much is a fact.”

“The books say so,” said Foster coldly.

“Now listen.” Potterley actually reached over and snatched at Foster’s jacket sleeve. “I need the chronoscope. I must have it. Don’t tell me it doesn’t exist. What we’re going to do is find out enough about neutrinos to be able to-”

Potterley drew himself up short.

Foster drew his sleeve away. He needed no ending to that sentence. He supplied it himself. He said, "Build one of our own?"

Potterley looked sour as though he would rather not have said it point-blank. Nevertheless, he said, "Why not?"

"Because that's out of the question," said Foster. "If what I've read is correct, then it took Sterbinski twenty years to build his machine and several millions in composite grants. Do you think you and I can duplicate that illegally? Suppose we had the time, which we haven't, and suppose I could learn enough out of books, which I doubt, where would we get the money and equipment? The chronoscope is supposed to fill a five-story building, for Heaven's sake."

"Then you won't help me?"

"Well, I'll tell you what. I have one way in which I may be able to find out something--"

"What is that?" asked Potterley at once.

"Never mind. That's not important. But I may be able to find out enough to tell you whether the government is deliberately suppressing research by chronoscope. I may confirm the evidence you already have or I may be able to prove that your evidence is misleading. I don't know what good it will do you in either case, but it's as far as I can go. It's my limit."

Potterley watched the young man go finally. He was angry with himself. Why had he allowed himself to grow so careless as to permit the fellow to guess that he was thinking in terms of a chronoscope of his own. That was premature.

But then why did the young fool have to suppose that a chronoscope might not exist at all?

It had to exist. It had to. What was the use of saying it didn't?

And why couldn't a second one be built? Science had advanced in the fifty years since Sterbinski. All that was needed was knowledge.

Let the youngster gather knowledge. Let him think a small gathering would be his limit. Having taken the path to anarchy, there would be no limit. If the boy were not driven onward by something in himself, the first steps

would be error enough to force the rest. Potterley was quite certain he would not hesitate to use blackmail.

Potterley waved a last good-bye and looked up. It was beginning to rain.

Certainly! Blackmail if necessary, but he would not be stopped.

Foster steered his car across the bleak outskirts of town and scarcely noticed the rain.

He was a fool, he told himself, but he couldn't leave things as they were. He had to know. He damned his streak of undisciplined curiosity, but he had to know.

But he would go no further than Uncle Ralph. He swore mightily to himself that it would stop there. In that way, there would be no evidence against him, no real evidence. Uncle Ralph would be discreet.

In a way, he was secretly ashamed of Uncle Ralph. He hadn't mentioned him to Potterley partly out of caution and partly because he did not wish to witness the lifted eyebrow, the inevitable half-smile. Professional science writers, however useful, were a little outside the pale, fit only for patronizing contempt. The fact that, as a class, they made more money than did research scientists only made matters worse, of course.

Still, there were times when a science writer in the family could be a convenience. Not being really educated, they did not have to specialize. Consequently, a good science writer knew practically everything. . . . And Uncle Ralph was one of the best.

Ralph Nimmo had no college degree and was rather proud of it. "A degree," he once said to Jonas Foster, when both were considerably younger, "is a first step down a ruinous highway. You don't want to waste it so you go on to graduate work and doctoral research. You end up a thoroughgoing ignoramus on everything in the world except for one subdivisional sliver of nothing.

"On the other hand, if you guard your mind carefully and keep it blank of any clutter of information till maturity is reached, filling it only with intelligence and training it only in clear thinking, you then have a powerful instrument at your disposal and you can become a science writer."

Nimmo received his first assignment at the age of twenty-five, after he had completed his apprenticeship and been out in the field for less than three months. It came in the shape of a clotted manuscript whose language would impart no glimmering of understanding to any reader, however qualified, without careful study and some inspired guesswork. Nimmo took it apart and put it together again (after five long and exasperating interviews with the authors, who were biophysicists), making the language taut and meaningful and smoothing the style to a pleasant gloss.

“Why not?” he would say tolerantly to his nephew, who countered his strictures on degrees by berating him with his readiness to hang on the fringes of science. “The fringe is important. Your scientists can’t write. Why should they be expected to? They aren’t expected to be grand masters at chess or virtuosos at the violin, so why expect them to know how to put words together? Why not leave that for specialists, too?”

“Good Lord, Jonas, read your literature of a hundred years ago. Discount the fact that the science is out of date and that some of the expressions are out of date. Just try to read it and make sense out of it. It’s just jaw-cracking, amateurish. Pages are published uselessly; whole articles which are either incomprehensible or both.”

“But you don’t get recognition, Uncle Ralph,” protested young Foster, who was getting ready to start his college career and was rather starry-eyed about it. “You could be a terrific researcher.”

“I get recognition,” said Nimmo. “Don’t think for a minute I don’t. Sure, a biochemist or a strato-meteorologist won’t give me the time of day, but they pay me well enough. Just find out what happens when some first-class ; chemist finds the Commission has cut his year’s allowance for science writing. He’ll fight harder for enough funds to afford me, or someone like me, than to get a recording ionograph.”

He grinned broadly and Foster grinned back. Actually, he was proud of his paunchy, round-faced, stub-fingered uncle, whose vanity made him brush his fringe of hair futilely over the desert on his pate and made him dress like an unmade haystack because such negligence was his trademark. Ashamed, but proud, too.

And now Foster entered his uncle’s cluttered apartment in no mood at all for grinning. He was nine years older now and so was Uncle Ralph. For nine more years, papers in every branch of science had come to him for polishing and a little of each had crept into his capacious mind.

Nimmo was eating seedless grapes, popping them into his mouth one at a time. He tossed a bunch to Foster who caught them by a hair, then bent to retrieve individual grapes that had torn loose and fallen to the floor.

“Let them be. Don’t bother,” said Nimmo carelessly. “Someone comes in here to clean once a week. What’s up? Having trouble with your grant application write-up?”

“I haven’t really got into that yet.”

“You haven’t? Get a move on, boy. Are you waiting for me to offer to do the final arrangement?”

“I couldn’t afford you, Uncle.”

“Aw, come on. It’s all in the family. Grant me all popular publication rights and no cash need change hands.”

Foster nodded. “If you’re serious, it’s a deal.”

“It’s a deal.”

It was a gamble, of course, but Foster knew enough of Nimmo’s science writing to realize it could pay off. Some dramatic discovery of public interest on primitive man or on a new surgical technique, or on any branch of spationautics could mean a very cash-attracting article in any of the mass media of communication.

It was Nimmo, for instance, who had written up, for scientific consumption, the series of papers by Bryce and co-workers that elucidated the fine structure of two cancer viruses, for which job he asked the picayune payment of fifteen hundred dollars, provided popular publication rights were included. He then wrote up, exclusively, the same work in semidramatic form for use in trimensional video for a twenty-thousand-dollar advance plus rental royalties that were still coming in after five years.

Foster said bluntly, “What do you know about neutrinics, Uncle?”

“Neutrinsics?” Nimmo’s small eyes looked surprised. “Are you working in that? I thought it was pseudo-gravitic optics.”

“It is p.g.o. I just happen to be asking about neutrinsics.”

“That’s a devil of a thing to be doing. You’re stepping out of line. You know that, don’t you?”

“I don’t expect you to call the Commission because I’m a little curious about things.”

“Maybe I should before you get into trouble. Curiosity is an occupational danger with scientists. I’ve watched it work. One of them will be moving quietly along on a problem, then curiosity leads him up a strange creek. Next thing you know they’ve done so little on their proper problem, they can’t justify for a project renewal. I’ve seen more-”

“All I want to know,” said Foster patiently, “is what’s been passing through your hands lately on neutrinsics.”

Nimmo leaned back, chewing at a grape thoughtfully. “Nothing. Nothing ever. I don’t recall ever getting a paper on neutrinsics.”

“What!” Foster was openly astonished. “Then who does get the work?”

“Now that you ask,” said Nimmo, “I don’t know. Don’t recall anyone talking about it at the annual conventions. I don’t think much work is being done there.”

“Why not?”

“Hey, there, don’t bark. I’m not doing anything. My guess would be-”

Foster was exasperated. “Don’t you know?”

“Hmp. I’ll tell you what I know about neutrinsics. It concerns the applications of neutrino movements and the forces involved-”

“Sure. Sure. Just as electronics deals with the applications of electron movements and the forces involved, and pseudo-gravities deals with the applications of artificial gravitational fields. I didn’t come to you for that. Is that all you know?”

“And,” said Nimmo with equanimity, “neutrinsics is the basis of time viewing and that is all I know.”

Foster slouched back in his chair and massaged one lean cheek with

great intensity. He felt angrily dissatisfied. Without formulating it explicitly in his own mind, he had felt sure, somehow, that Nimmo would come up with some late reports, bring up interesting facets of modern neutrino physics, send him back to Potterley able to say that the elderly historian was mistaken, that his data was misleading, his deductions mistaken.

Then he could have returned to his proper work.

But now . . .

He told himself angrily: So they're not doing much work in the field. Does that make it deliberate suppression? What if neutrino physics is a sterile discipline? Maybe it is. I don't know. Potterley doesn't. Why waste the intellectual resources of humanity on nothing? Or the work might be secret for some legitimate reason. It might be ...

The trouble was, he had to know. He couldn't leave things as they were now. He couldn't!

He said, "Is there a text on neutrino physics, Uncle Ralph? I mean a clear and simple one. An elementary one."

Nimmo thought, his plump cheeks puffing out with a series of sighs. "You ask the damndest questions. The only one I ever heard of was Sterbinski and somebody. I've never seen it, but I viewed something about it once. . . . Sterbinski and LaMarr, that's it."

"Is that the Sterbinski who invented the chronoscope?" i "I think so. Proves the book ought to be good." • "Is there a recent edition? Sterbinski died thirty years ago."

Nimmo shrugged and said nothing.

"Can you find out?"

They sat in silence for a moment, while Nimmo shifted his bulk to the creaking tune of the chair he sat on. Then the science writer said, "Are you going to tell me what this is all about?"

"I can't. Will you help me anyway, Uncle Ralph? Will you get me a copy of the text?"

"Well, you've taught me all I know on pseudo-gravities. I should be

grateful. Tell you what-I'll help you on one condition."

"Which is?"

The older man was suddenly very grave. "That you be careful, Jonas. You're obviously way out of line whatever you're doing. Don't blow up your career just because you're curious about something you haven't been assigned to and which is none of your business. Understand?"

Foster nodded, but he hardly heard. He was thinking furiously.

A full week later, Ralph Nimmo eased his rotund figure into Jonas Foster's on-campus two-room combination and said, in a hoarse whisper, "I've got something."

"What?" Foster was immediately eager.

"A copy of Sterbinski and LaMarr." He produced it, or rather a corner of it, from his ample topcoat.

Foster almost automatically eyed door and windows to make sure they were closed and shaded respectively, then held out his hand.

The film case was flaking with age, and when he cracked it the film was faded and growing brittle. He said sharply, "Is this all?"

"Gratitude, my boy, gratitude!" Nimmo sat down with a grunt, and reached into a pocket for an apple.

"Oh, I'm grateful, but it's so old."

"And lucky to get it at that. I tried to get a film run from the Congressional Library. No go. The book was restricted."

"Then how did you get this?"

"Stole it." He was biting crunchingly around the core. "New York Public."

"What?"

"Simple enough. I had access to the stacks, naturally. So I stepped over a chained railing when no one was around, dug this up, and walked out with it. They're very trusting out there. Meanwhile, they won't miss it in

years. . . . Only you'd better not let anyone see it on you, nephew."

Foster stared at the film as though it were literally hot.

Nimmo discarded the core and reached for a second apple. "Funny thing, now. There's nothing more recent in the whole field of neutrincs. Not a monograph, not a paper, not a progress note. Nothing since the chronoscope."

"Uh-huh," said Foster absently.

Foster worked evenings in the Potterley home. He could not trust his own on-campus rooms for the purpose. The evening work grew more real to him than his own grant applications. Sometimes he worried about it but then that stopped, too.

His work consisted, at first, simply in viewing and reviewing the text film. Later it consisted in thinking (sometimes while a section of the book ran itself off through the pocket projector, disregarded).

Sometimes Potterley would come down to watch, to sit with prim, eager eyes, as though he expected thought processes to solidify and become visible in all their convolutions. He interfered in only two ways. He did not allow Foster to smoke and sometimes he talked.

It wasn't conversation talk, never that. Rather it was a low-voiced monologue with which, it seemed, he scarcely expected to command attention. It was much more as though he were relieving a pressure within himself.

Carthage! Always Carthage!

Carthage, the New York of the ancient Mediterranean. Carthage, commercial empire and queen of the seas. Carthage, all that Syracuse and Alexandria pretended to be. Carthage, maligned by her enemies and inarticulate in her own defense.

She had been defeated once by Rome and then driven out of Sicily and Sardinia, but came back to more than recoup her losses by new dominions in Spain, and raised up Hannibal to give the Romans sixteen years of terror.

In the end, she lost again a second time, reconciled herself to fate and built again with broken tools a limping life in shrunken territory, succeeding

so well that jealous Rome deliberately forced a third war. And then Carthage, with nothing but bare hands and tenacity, built weapons and forced Rome into a two-year war that ended only with complete destruction of the city, the inhabitants throwing themselves into their flaming houses rather than surrender.

“Could people fight so for a city and a way of life as bad as the ancient writers painted it? Hannibal was a better general than any Roman and his soldiers were absolutely faithful to him. Even his bitterest enemies praised him. There was a Carthaginian. It is fashionable to say that he was an atypical Carthaginian, better than the others, a diamond placed in garbage. But then why was he so faithful to Carthage, even to his death after years of exile? They talk of Moloch-”

Foster didn't always listen but sometimes he couldn't help himself and he shuddered and turned sick at the bloody tale of child sacrifice.

But Potterley went on earnestly, “Just the same, it isn't true. It's a twenty-five-hundred-year-old canard started by the Greeks and Romans. They had their own slaves, their crucifixions and torture, their gladiatorial contests. They weren't holy. The Moloch story is what later ages would have called war propaganda, the big lie. I can prove it was a lie. I can prove it and, by Heaven, I will-I will-”

He would mumble that promise over and over again in his earnestness.

Mrs. Potterley visited him also, but less frequently, usually on Tuesdays and Thursdays when Dr. Potterley himself had an evening course to take care of and was not present.

She would sit quietly, scarcely talking, face slack and doughy, eyes blank, her whole attitude distant and withdrawn.

The first time, Foster tried, uneasily, to suggest that she leave.

She said tonelessly, “Do I disturb you?”

“No, of course not,” lied Foster restlessly. “It's just that-that-” He couldn't complete the sentence.

She nodded, as though accepting an invitation to stay. Then she opened a cloth bag she had brought with her and took out a quire of vitron sheets which she proceeded to weave together by rapid, delicate movements

of a pair of slender, tetra-faceted depolarizers, whose battery-fed wires made her look as though she were holding a large spider.

One evening, she said softly, "My daughter, Laurel, is your age."

Foster started, as much at the sudden unexpected sound of speech as at the words. He said, "I didn't know you had a daughter, Mrs. Potterley."

"She died. Years ago."

The vitron grew under the deft manipulations into the uneven shape of some garment Foster could not yet identify. There was nothing left for him to do but mutter inanely, "I'm sorry."

Mrs. Potterley sighed. "I dream about her often." She raised her blue, distant eyes to him.

Foster winced and looked away.

Another evening she asked, pulling at one of the vitron sheets to loosen its gentle clinging to her dress, "What is time viewing anyway?"

That remark broke into a particularly involved chain of thought, and Foster said snappishly, "Dr. Potterley can explain."

"He's tried to. Oh, my, yes. But I think he's a little impatient with me. He calls it chronoscopy most of the time. Do you actually see things in the past, like the trimensionals? Or does it just make little dot patterns like the computer you use?"

Foster stared at his hand computer with distaste. It worked well enough, but every operation had to be manually controlled and the answers were obtained in code. Now if he could use the school computer . . . Well, why dream, he felt conspicuous enough, as it was, carrying a hand computer under his arm every evening as he left his office.

He said, "I've never seen the chronoscope myself, but I'm under the impression that you actually see pictures and hear sound."

"You can hear people talk, too?"

"I think so." Then, half in desperation, "Look here, Mrs. Potterley, this must be awfully dull for you. I realize you don't like to leave a guest all to

himself, but really, Mrs. Potterley, you mustn't feel compelled-

"I don't feel compelled," she said. "I'm sitting here, waiting."

"Waiting? For what?"

She said composedly, "I listened to you that first evening. The time you first spoke to Arnold. I listened at the door."

He said, "You did?"

"I know I shouldn't have, but I was awfully worried about Arnold. I had a notion he was going to do something he oughtn't and I wanted to hear what. And then when I heard-" She paused, bending close over the vitron and peering at it.

"Heard what, Mrs. Potterley?"

"That you wouldn't build a chronoscope."

"Well, of course not."

"I thought maybe you might change your mind."

Foster glared at her. "Do you mean you're coming down here hoping I'll build a chronoscope, waiting for me to build one?" "I hope you do, Dr. Foster. Oh, I hope you do."

It was as though, all at once, a fuzzy veil had fallen off her face, leaving all her features clear and sharp, putting color into her cheeks, life into her eyes, the vibrations of something approaching excitement into her voice.

"Wouldn't it be wonderful," she whispered, "to have one? People of the past could live again. Pharaohs and kings and-just people. I hope you build one, Dr. Foster. I really-hope-"

She choked, it seemed, on the intensity of her own words and let the vitron sheets slip off her lap. She rose and ran up the basement stairs, while Foster's eyes followed her awkwardly fleeing body with astonishment and distress.

It cut deeper into Foster's nights and left him sleepless and painfully stiff with thought. It was almost a mental indigestion.

His grant requests went limping in, finally, to Ralph Nimmo. He scarcely had any hope for them. He thought numbly: They won't be approved.

If they weren't, of course, it would create a scandal in the department and probably mean his appointment at the university would not be renewed, come the end of the academic year.

He scarcely worried. It was the neutrino, the neutrino, only the neutrino. Its trail curved and veered sharply and led him breathlessly along uncharted pathways that even Sterbinski and LaMarr did not follow.

He called Nimmo. "Uncle Ralph, I need a few things. I'm calling from off the campus."

Nimmo's face in the video plate was jovial, but his voice was sharp. He said, "What you need is a course in communication. I'm having a hell of a time pulling your application into one intelligible piece. If that's what you're calling about—"

Foster shook his head impatiently. "That's not what I'm calling about. I need these." He scribbled quickly on a piece of paper and held it up before the receiver.

Nimmo yiped. "Hey, how many tricks do you think I can wangle?"

"You can get them, Uncle. You know you can."

Nimmo reread the list of items with silent motions of his plump lips and looked grave.

"What happens when you put those things together?" he asked. Foster shook his head. "You'll have exclusive popular publication rights to whatever turns up, the way it's always been. But please don't ask any questions now."

"I can't do miracles, you know."

"Do this one. You've got to. You're a science writer, not a research man. You don't have to account for anything. You've got friends and connections.

They can look the other way, can't they, to get a break from you next publication time?"

“Your faith, nephew, is touching. I’ll try.”

Nimmo succeeded. The material and equipment were brought over late one evening in a private touring car. Nimmo and Foster lugged it in with the grunting of men unused to manual labor.

Potterley stood at the entrance of the basement after Nimmo had left. He asked softly, “What’s this for?”

Foster brushed the hair off his forehead and gently massaged a sprained wrist. He said, “I want to conduct a few simple experiments.”

“Really?” The historian’s eyes glittered with excitement.

Foster felt exploited. He felt as though he were being led along a dangerous highway by the pull of pinching fingers on his nose; as though he could see the ruin clearly that lay in wait at the end of the path, yet walked eagerly and determinedly. Worst of all, he felt the compelling grip on his nose to be his own.

It was Potterley who began it, Potterley who stood there now, gloating; but the compulsion was his own.

Foster said sourly, “I’ll be wanting privacy now, Potterley. I can’t have you and your wife running down here and annoying me.”

He thought: If that offends him, let him kick me out. Let him put an end to this.

In his heart, though, he did not think being evicted would stop anything.

But it did not come to that. Potterley was showing no signs of offense. His mild gaze was unchanged. He said, “Of course, Dr. Foster, of course. All the privacy you wish.”

Foster watched him go. He was left still marching along the highway, perversely glad of it and hating himself for being glad.

He took to sleeping over on a cot in Potterley’s basement and spending his weekends there entirely.

During that period, preliminary word came through that his grants (as

doctored by Nimmo) had been approved. The Department Head brought the word and congratulated him.

Foster stared back distantly and mumbled, “Good. I’m glad,” with so little conviction that the other frowned and turned away without another word.

Foster gave the matter no further thought. It was a minor point, worth no notice. He was planning something that really counted, a climactic test for that evening.

One evening, a second and third and then, haggard and half beside himself with excitement, he called in Potterley.

Potterley came down the stairs and looked about at the homemade gadgetry. He said, in his soft voice, “The electric bills are quite high. I don’t mind the expense, but the City may ask questions. Can anything be done?”

It was a warm evening, but Potterley wore a tight collar and a semijacket. Foster, who was in his undershirt, lifted bleary eyes and said shakily, “It won’t be for much longer, Dr. Potterley. I’ve called you down to tell you something. A chronoscope can be built. A small one, of course, but it can be built.”

Potterley seized the railing. His body sagged. He managed a whisper. “Can it be built here?”

“Here in the basement,” said Foster wearily.

“Good Lord. You said-”

“I know what I said,” cried Foster impatiently. “I said it couldn’t be done. I didn’t know anything then. Even Sterbinski didn’t know anything.”

Potterley shook his head. “Are you sure? You’re not mistaken, Dr. Foster? I couldn’t endure it if-”

Foster said, “I’m not mistaken. Damn it, sir, if just theory had been enough, we could have had a time viewer over a hundred years ago, when the neutrino was first postulated. The trouble was, the original investigators considered it only a mysterious particle without mass or charge that could not be detected. It was just something to even up the bookkeeping and save the law of conservation of mass energy.”

He wasn't sure Potterley knew what he was talking about. He didn't care. He needed a breather. He had to get some of this out of his clotting thoughts. . . . And he needed background for what he would have to tell Potterley next.

He went on. "It was Sterbinski who first discovered that the neutrino broke through the space-time cross-sectional barrier, that it traveled through time as well as through space. It was Sterbinski who first devised a method for stopping neutrinos. He invented a neutrino recorder and learned how to interpret the pattern of the neutrino stream. Naturally, the stream had been affected and deflected by all the matter it had passed through in its passage through time, and the deflections could be analyzed and converted into the images of the matter that had done the deflecting. Time viewing was possible. Even air vibrations could be detected in this way and converted into sound."

Potterley was definitely not listening. He said, "Yes. Yes. But when can you build a chronoscope?"

Foster said urgently, "Let me finish. Everything depends on the method used to detect and analyze the neutrino stream. Sterbinski's method was difficult and roundabout. It required mountains of energy. But I've studied pseudo-gravities, Dr. Potterley, the science of artificial gravitational fields. I've specialized in the behavior of light in such fields. It's a new science. Sterbinski knew nothing of it. If he had, he would have seen-anyone would have-a much better and more efficient method of detecting neutrinos using a pseudo-gravitic field. If I had known more neutrinics to begin with, I would have seen it at once."

Potterley brightened a bit. "I knew it," he said. "Even if they stop research in neutrinics there is no way the government can be sure that discoveries in other segments of science won't reflect knowledge on neutrinics. So much for the value of centralized direction of science. I thought this long ago, Dr. Foster, before you ever came to work here."

"I congratulate you on that," said Foster, "but there's one thing-"

"Oh, never mind all this. Answer me. Please. When can you build a chronoscope?"

"I'm trying to tell you something, Dr. Potterley. A chronoscope won't do you any good." (This is it, Foster thought.)

Slowly, Potterley descended the stairs. He stood facing Foster. "What

do you mean? Why won't it help me?"

"You won't see Carthage. It's what I've got to tell you. It's what I've been leading up to. You can never see Carthage."

Potterley shook his head slightly. "Oh, no, you're wrong. If you have the chronoscope, just focus it properly--"

"No, Dr. Potterley. It's not a question of focus. There are random factors affecting the neutrino stream, as they affect all subatomic particles. What we call the uncertainty principle. When the stream is recorded and interpreted, the random factor comes out as fuzziness, or 'noise' as the communications boys speak of it. The further back in time you penetrate, the more pronounced the fuzziness, the greater the noise. After a while, the noise drowns out the picture. Do you understand?"

"More power," said Potterley in a dead kind of voice.

"That won't help. When the noise blurs out detail, magnifying detail magnifies the noise, too. You can't see anything in a sun-burned film by enlarging it, can you? Get this through your head, now. The physical nature of the universe sets limits. The random thermal motions of air molecules set limits to how weak a sound can be detected by any instrument. The length of a light wave or of an electron wave sets limits to the size of objects that can be seen by any instrument. It works that way in chronoscopy, too. You can only time view so far."

"How far? How far?"

Foster took a deep breath. "A century and a quarter. That's the most."

"But the monthly bulletin the Commission puts out deals with ancient history almost entirely." The historian laughed shakily. "You must be wrong. The government has data as far back as 3000 b.c."

"When did you switch to believing them?" demanded Foster, scornfully. "You began this business by proving they were lying; that no historian had made use of the chronoscope. Don't you see why now? No historian, except one interested in contemporary history, could. No chronoscope can possibly see back in time further than 1920 under any conditions."

"You're wrong. You don't know everything," said Potterley.

“The truth won’t bend itself to your convenience either. Face it. The government’s part in this is to perpetuate a hoax.”

“Why?”

“I don’t know why.”

Potterley’s snubby nose was twitching. His eyes were bulging. He pleaded, “It’s only theory, Dr. Foster. Build a chronoscope. Build one and try.”

Foster caught Potterley’s shoulders in a sudden, fierce grip. “Do you think I haven’t? Do you think I would tell you this before I had checked it every way I knew? I have built one. It’s all around you. Look!”

He ran to the switches at the power leads. He flicked them on, one by one. He turned a resistor, adjusted other knobs, put out the cellar lights. “Wait. Let it warm up.”

There was a small glow near the center of one wall. Potterley was gibbering incoherently, but Foster only cried again, “Look!”

The light sharpened and brightened, broke up into a light-and-dark pattern. Men and women! Fuzzy. Features blurred. Arms and legs mere streaks. An old-fashioned ground car, unclear but recognizable as one of the kind that had once used gasoline-powered internal-combustion engines, sped by.

Foster said, “Mid-twentieth century, somewhere. I can’t hook up an audio yet so this is soundless. Eventually, we can add sound. Anyway, mid-twentieth is almost as far back as you can go. Believe me, that’s the best focusing that can be done.”

Potterley said, “Build a larger machine, a stronger one. Improve your circuits.”

“You can’t lick the Uncertainty Principle, man, any more than you can live on the sun. There are physical limits to what can be done.”

“You’re lying. I won’t believe you. I-”

A new voice sounded, raised shrilly to make itself heard.

“Arnold! Dr. Foster!”

The young physicist turned at once. Dr. Potterley froze for a long moment, then said, without turning, “What is it, Caroline? Leave us.”

“No!” Mrs. Potterley descended the stairs. “I heard. I couldn’t help hearing. Do you have a time viewer here, Dr. Foster? Here in the basement?”

“Yes, I do, Mrs. Potterley. A kind of time viewer. Not a good one. I can’t get sound yet and the picture is darned blurry, but it works.”

Mrs. Potterley clasped her hands and held them tightly against her breast. “How wonderful. How wonderful.”

“It’s not at all wonderful,” snapped Potterley. “The young fool can’t reach further back than-”

“Now, look,” began Foster in exasperation. . . .

“Please!” cried Mrs. Potterley. “Listen to me. Arnold, don’t you see that as long as we can use it for twenty years back, we can see Laurel once again? What do we care about Carthage and ancient times? It’s Laurel we can see.

She’ll be alive for us again. Leave the machine here, Dr. Foster. Show us how to work it.”

Foster stared at her then at her husband. Dr. Potterley’s face had gone white. Though his voice stayed low and even, its calmness was somehow gone. He said, “You’re a fool!”

Caroline said weakly, “Arnold!”

“You’re a fool, I say. What will you see? The past. The dead past. Will Laurel do one thing she did not do? Will you see one thing you haven’t seen? Will you live three years over and over again, watching a baby who’ll never grow up no matter how you watch?”

His voice came near to cracking, but held. He stopped closer to her, seized her shoulder and shook her roughly. “Do you know what will happen to you if you do that? They’ll come to take you away because you’ll go mad. Yes, mad. Do you want mental treatment? Do you want to be shut up, to undergo the psychic probe?”

Mrs. Potterley tore away. There was no trace of softness or vagueness about her. She had twisted into a virago. “I want to see my child, Arnold. She’s in that machine and I want her.”

“She’s not in the machine. An image is. Can’t you understand? An image! Something that’s not real!”

“I want my child. Do you hear me?” She flew at him, screaming, fists beating. “I want my child.”

The historian retreated at the fury of the assault, crying out. Foster moved to step between, when Mrs. Potterley dropped, sobbing wildly, to the floor.

Potterley turned, eyes desperately seeking. With a sudden heave, he snatched at a Lando-rod, tearing it from its support, and whirling away before Foster, numbed by all that was taking place, could move to stop him.

“Stand back!” gasped Potterley, “or I’ll kill you. I swear it.”

He swung with force, and Foster jumped back.

Potterley turned with fury on every part of the structure in the cellar, and Foster, after the first crash of glass, watched dazedly.

Potterley spent his rage and then he was standing quietly amid shards and splinters, with a broken Lando-rod in his hand. He said to Foster in a whisper, “Now get out of here! Never come back! If any of this cost you anything, send me a bill and I’ll pay for it. I’ll pay double.”

Foster shrugged, picked up his shirt and moved up the basement stairs. He could hear Mrs. Potterley sobbing loudly, and, as he turned at the head of the stairs for a last look, he saw Dr. Potterley bending over her, his face convulsed with sorrow.

Two days later, with the school day drawing to a close, and Foster looking wearily about to see if there were any data on his newly approved projects that he wished to take home, Dr. Potterley appeared once more. He was standing at the open door of Foster’s office.

The historian was neatly dressed as ever. He lifted his hand in a gesture that was too vague to be a greeting, too abortive to be a plea. Foster stared stonily.

Potterley said, "I waited till five, till you were . . . May I come in?"

Foster nodded.

Potterley said, "I suppose I ought to apologize for my behavior. I was dreadfully disappointed; not quite master of myself. Still, it was inexcusable."

"I accept your apology," said Foster.

"Is that all?"

"My wife called you, I think."

"Yes, she has."

"She has been quite hysterical. She told me she had but I couldn't be quite sure-

"Could you tell me-would you be so kind as to tell me what she wanted?"

"She wanted a chronoscope. She said she had some money of her own. She was willing to pay."

"Did you-make any commitments?"

"I said I wasn't in the manufacturing business."

"Good," breathed Potterley, his chest expanding with a sigh of relief. "Please don't take any calls from her. She's not-quite-

"Look, Dr. Potterfey," said Foster, "I'm not getting into any domestic quarrels, but you'd better be prepared for something. Chronoscopes can be built by anybody Given a few simple parts that can be bought through some etherics sales center, it can be built in the home workshop. The video part, anyway."

"But no one else will think of it beside you, will they? No one has."

"I don't intend to keep it secret."

"But you can't publish. It's illegal research."

"That doesn't matter any more, Dr. Potterley. If I lose my grants, I lose

them. If the university is displeased, I'll resign. It just doesn't matter."

"But you can't do that!"

"Till now," said Foster, "you didn't mind my risking loss of grants and position. Why do you turn so tender about it now? Now let me explain something to you. When you first came to me, I believed in organized and directed research; the situation as it existed, in other words. I considered you an intellectual anarchist, Dr. Potterley, and dangerous. But, for one reason or another, I've been an anarchist myself for months now and I have achieved great things.

"Those things have been achieved not because I am a brilliant scientist. Not at all. It was just that scientific research had been directed from above and holes were left that could be filled in by anyone who looked in the right direction. And anyone might have if the government hadn't actively tried to prevent it.

"Now understand me. I still believe directed research can be useful. I'm not in favor of a retreat to total anarchy. But there must be a middle ground. Directed research can retain flexibility. A scientist must be allowed to follow his curiosity, at least in his spare time."

Potterley sat down. He said ingratiatingly, "Let's discuss this, Foster. I appreciate your idealism. You're young. You want the moon. But you can't destroy yourself through fancy notions of what research must consist of. I got you into this. I am responsible and I blame myself bitterly. I was acting emotionally. My interest in Carthage blinded me and I was a damned fool."

Foster broke in. "You mean you've changed completely in two days? Carthage is nothing? Government suppression of research is nothing?"

"Even a damned fool like myself can learn, Foster. My wife taught me something. I understand the reason for government suppression of neutratics now. I didn't two days ago. And, understanding, I approve. You saw the way my wife reacted to the news of a chronoscope in the basement. I had envisioned a chronoscope used for research purposes. All she could see was the personal pleasure of returning neurotically to a personal past, a dead past. The pure researcher, Foster, is in the minority. People like my wife would outweigh us.

"For the government to encourage chronoscopy would have meant that everyone's past would be visible. The government officers would be

subjected to blackmail and improper pressure, since who on Earth has a past that is absolutely clean? Organized government might become impossible.”

Foster licked his lips. “Maybe. Maybe the government has some justification in its own eyes. Still, there’s an important principle involved here. Who knows what other scientific advances are being stymied because scientists are being stifled into walking a narrow path? If the chronoscope becomes the terror of a few politicians, it’s a price that must be paid. The public must realize that science must be free and there is no more dramatic way of doing it than to publish my discovery, one way or another, legally or illegally.”

Potterley’s brow was damp with perspiration, but his voice remained even. “Oh, not just a few politicians, Dr. Foster. Don’t think that. It would be my terror, too. My wife would spend her time living with our dead daughter. She would retreat further from reality. She would go mad living the same scenes over and over. And not just my terror. There would be others like her. Children searching for their dead parents or their own youth. We’ll have a whole world living in the past. Midsummer madness.”

Foster said, “Moral judgments can’t stand in the way. There isn’t one advance at any time in history that mankind hasn’t had the ingenuity to pervert. Mankind must also have the ingenuity to prevent. As for the chronoscope, your delvers into the dead past will get tired soon enough. They’ll catch their loved parents in some of the things their loved parents did and they’ll lose their enthusiasm for it all. But all this is trivial. With me, it’s a matter of important principle.”

Potterley said, “Hang your principle. Can’t you understand men and women as well as principle? Don’t you understand that my wife will live through the fire that killed our baby? She won’t be able to help herself. I know her. She’ll follow through each step, trying to prevent it. She’ll live it over and over again, hoping each time that it won’t happen. How many times do you want to kill Laurel?” A huskiness had crept into his voice.

A thought crossed Foster’s mind. “What are you really afraid she’ll find out, Dr. Potterley? What happened the night of the fire?”

The historian’s hands went up quickly to cover his face and they shook with his dry sobs. Foster turned away and stared uncomfortably out the window.

Potterley said after a while, “It’s a long time since I’ve had to think of

it. Caroline was away. I was baby-sitting. I went into the baby's bedroom midevening to see if she had kicked off the bedclothes. I had my cigarette with me ... I smoked in those days. I must have stubbed it out before putting it in the ashtray on the chest of drawers. I was always careful. The baby was all right. I returned to the living room and fell asleep before the video. I awoke, choking, surrounded by fire. I don't know how it started."

"But you think it may have been the cigarette, is that it?" said Foster. "A cigarette which, for once, you forgot to stub out?"

"I don't know. I tried to save her, but she was dead in my arms when I got out."

"You never told your wife about the cigarette, I suppose."

Potterley shook his head. "But I've lived with it."

"Only now, with a chronoscope, she'll find out. Maybe it wasn't the cigarette. Maybe you did stub it out. Isn't that possible?"

The scant tears had dried on Potterley's face. The redness had subsided. He said, "I can't take the chance. . . . But it's not just myself, Foster. The past has its terrors for most people. Don't loose those terrors on the human race."

Foster paced the floor. Somehow, this explained the reason for Potterley's rabid, irrational desire to boost the Carthaginians, deify them, most of all disprove the story of their fiery sacrifices to Moloch. By freeing them of the guilt of infanticide by fire, he symbolically freed himself of the same guilt.

So the same fire that had driven him on to causing the construction of a chronoscope was now driving him on to the destruction.

Foster looked sadly at the older man. "I see your position, Dr. Potterley, but this goes above personal feelings. I've got to smash this throttling hold on the throat of science."

Potterley said, savagely, "You mean you want the fame and wealth that goes with such a discovery."

"I don't know about the wealth, but that, too, I suppose. I'm no more than human."

“You won’t suppress your knowledge?”

“Not under any circumstances.”

“Well, then-” and the historian got to his feet and stood for a moment, glaring.

Foster had an odd moment of terror. The man was older than he, smaller, feebler, and he didn’t look armed. Still . . .

Foster said, “If you’re thinking of killing me or anything insane like that, I’ve got the information in a safety-deposit vault where the proper people will find it in case of my disappearance or death.”

Potterley said, “Don’t be a fool,” and stalked out.

Foster closed the door, locked it and sat down to think. He felt silly. He had no information in any safety-deposit vault, of course. Such a melodramatic action would not have occurred to him ordinarily. But now it had.

Feeling even sillier, he spent an hour writing out the equations of the application of pseudo-gravitic optics to neutrino recording, and some diagrams for the engineering details of construction. He sealed it in an envelope and scrawled Ralph Nimmo’s name over the outside.

He spent a rather restless night and the next morning, on the way to school, dropped the envelope off at the bank, with appropriate instructions to an official, who made him sign a paper permitting the box to be opened after his death.

He called Nimmo to tell him of the existence of the envelope, refusing querulously to say anything about its contents.

He had never felt so ridiculously self-conscious as at that moment.

That night and the next, Foster spent in only fitful sleep, finding himself face to face with the highly practical problem of the publication of data unethically obtained.

The Proceedings of the Society for Pseudo-Gravities, which was the journal with which he was best acquainted, would certainly not touch any paper that did not include the magic footnote: “The work described in this

paper was made possible by Grant No. so-and-so from the Commission of Research of the United Nations.”

Nor, doubly so, would the Journal of Physics.

There were always the minor journals who might overlook the nature of the article for the sake of the sensation, but that would require a little financial negotiation on which he hesitated to embark. It might, on the whole, be better to pay the cost of publishing a small pamphlet for general distribution among scholars. In that case, he would even be able to dispense with the services of a science writer, sacrificing polish for speed. He would have to find a reliable printer. Uncle Ralph might know one.

He walked down the corridor to his office and wondered anxiously if perhaps he ought to waste no further time, give himself no further chance to lapse into indecision and take the risk of calling Ralph from his office phone. He was so absorbed in his own heavy thoughts that he did not notice that his room was occupied until he turned from the clothes closet and approached his desk.

Dr. Potterley was there and a man whom Foster did not recognize.

Foster stared at them. “What’s this?”

Potterley said, “I’m sorry, but I had to stop you.”

Foster continued staring. “What are you talking about?”

The stranger said, “Let me introduce myself.” He had large teeth, a little uneven, and they showed prominently when he smiled. “I am Thaddeus Araman, Department Head of the Division of Chronoscopy. I am here to see you concerning information brought to me by Professor Arnold Potterley and confirmed by our own sources-”

Potterley said breathlessly, “I took all the blame, Dr. Foster. I explained that it was I who persuaded you against your will into unethical practices. I have offered to accept full responsibility and punishment. I don’t wish you harmed in any way. It’s just that chronoscopy must not be permitted!”

Araman nodded. “He has taken the blame as he says, Dr. Foster, but this thing is out of his hands now.”

Foster said, “So? What are you going to do? Blackball me from all consideration for research grants?”

“That is in my power,” said Araman.

“Order the university to discharge me?”

“That, too, is in my power.”

“All right, go ahead. Consider it done. I’ll leave my office now, with you. I can send for my books later. If you insist, I’ll leave my books. Is that all?”

“Not quite,” said Araman. “You must engage to do no further research in chronoscopy, to publish none of your findings in chronoscopy and, of course, to build no chronoscope. You will remain under surveillance indefinitely to make sure you keep that promise.”

“Supposing I refuse to promise? What can you do? Doing research out of my field may be unethical, but it isn’t a criminal offense.”

“In the case of chronoscopy, my young friend,” said Araman patiently, “it is a criminal offense. If necessary, you will be put in jail and kept there.”

“Why?” shouted Foster. “What’s magic about chronoscopy?”

Araman said, “That’s the way it is. We cannot allow further developments in the field. My own job is, primarily, to make sure of that, and I intend to do my job. Unfortunately, I had no knowledge, nor did anyone in the department, that the optics of pseudo-gravity fields had such immediate application to chronoscopy. Score one for general ignorance, but henceforward research will be steered properly in that respect, too.”

Foster said, “That won’t help. Something else may apply that neither you nor I dream of. All science hangs together. It’s one piece. If you want to stop one part, you’ve got to stop it all.”

“No doubt that is true,” said Araman, “in theory. On the practical side, however, we have managed quite well to hold chronoscopy down to the original Sterbinski level for fifty years. Having caught you in time, Dr. Foster, we hope to continue doing so indefinitely. And we wouldn’t have come this close to disaster, either, if I had accepted Dr. Potterley at something more than face value.”

He turned toward the historian and lifted his eyebrows in a kind of humorous self-deprecation. "I'm afraid, sir, that I dismissed you as a history professor and no more on the occasion of our first interview. Had I done my job properly and checked on you, this would not have happened."

Foster said abruptly, "Is anyone allowed to use the government chrono-scope?"

"No one outside our division under any pretext. I say that since it is obvious to me that you have already guessed as much. I warn you, though, that any repetition of that fact will be a criminal, not an ethical, offense."

"And your chronoscope doesn't go back more than a hundred twenty-five years or so, does it?"

"It doesn't."

"Then your bulletin with its stories of time viewing ancient times is a hoax?"

Araman said coolly, "With the knowledge you now have, it is obvious you know that for a certainty. However, I confirm your remark. The monthly bulletin is a hoax."

"In that case," said Foster, "I will not promise to suppress my knowledge of chronoscopy. If you wish to arrest me, go ahead. My defense at the trial will be enough to destroy the vicious card house of directed research and bring it tumbling down. Directing research is one thing; suppressing it and depriving mankind of its benefits is quite another."

Araman said, "Oh, let's get something straight, Dr. Foster. If you do not co-operate, you will go to jail directly. You will not see a lawyer, you will not be charged, you will not have a trial. You will simply stay in jail."

"Oh, no," said Foster, "you're bluffing. This is not the twentieth century, you know."

There was a stir outside the office, the clatter of feet, a high-pitched shout that Foster was sure he recognized. The door crashed open, the lock splintering, and three intertwined figures stumbled in.

As they did so, one of the men raised a blaster and brought its butt down hard on the skull of another.

There was a whoosh of expiring air, and the one whose head was struck went limp.

“Uncle Ralph!” cried Foster.

Araman frowned. “Put him down in that chair,” he ordered, “and get some water.”

Ralph Nimmo, rubbing his head with a gingerly sort of disgust, said, “There was no need to get rough, Araman.”

Araman said, “The guard should have been rough sooner and kept you out of here, Nimmo. You’d have been better off.”

“You know each other?” asked Foster.

“I’ve had dealings with the man,” said Nimmo, still rubbing. “If he’s here in your office, nephew, you’re in trouble.”

“And you, too,” said Araman angrily. “I know Dr. Foster consulted you on neutrino literature.”

Nimmo corrugated his forehead, then straightened it with a wince as though the action had brought pain. “So?” he said. “What else do you know about me?”

“We will know everything about you soon enough. Meanwhile, that one item is enough to implicate you. What are you doing here?”

“My dear Dr. Araman,” said Nimmo, some of his jauntiness restored, “day before yesterday, my jackass of a nephew called me. He had placed some mysterious information-”

“Don’t tell him! Don’t say anything!” cried Foster.

Araman glared at him coldly. “We know all about it, Dr. Foster. The safety-deposit box has been opened and its contents removed.”

“But how can you know-” Foster’s voice died away in a kind of furious frustration.

“Anyway,” said Nimmo, “I decided the net must be closing around him and, after I took care of a few items, I came down to tell him to get off this thing he’s doing. It’s not worth his career.”

“Does that mean you know what he’s doing?” asked Araman.

“He never told me,” said Nimmo, “but I’m a science writer with a hell of a lot of experience. I know which side of an atom is electronified. The boy, Foster, specializes in pseudo-gravitic optics and coached me on the stuff himself. He got me to get him a textbook on neutrinics and I kind of ship-viewed it myself before handing it over. I can put the two together. He asked me to get him certain pieces of physical equipment, and that was evidence, too. Stop me if I’m wrong, but my nephew has built a semiportable, low-power chronoscope. Yes, or-yes?”

“Yes.” Araman reached thoughtfully for a cigarette and paid no attention to Dr. Potterley (watching silently, as though all were a dream) who shied away, gasping, from the white cylinder. “Another mistake for me. I ought to resign. I should have put tabs on you, too, Nimmo, instead of concentrating too hard on Potterley and Foster. I didn’t have much time of course and you’ve ended up safely here, but that doesn’t excuse me. You’re under arrest, Nimmo.”

“What for?” demanded the science writer.

“Unauthorized research.”

“I wasn’t doing any. I can’t, not being a registered scientist. And even if I did, it’s not a criminal offense.”

Foster said savagely, “No use, Uncle Ralph. This bureaucrat is making his own laws.”

“Like what?” demanded Nimmo.

“Like life imprisonment without trial.”

“Nuts,” said Nimmo. “This isn’t the twentieth cen-”

“I tried that,” said Foster. “It doesn’t bother him.”

“Well, nuts,” shouted Nimmo. “Look here, Araman. My nephew and I have relatives who haven’t lost touch with us, you know. The professor has some also, I imagine. You can’t just make us disappear. There’ll be questions and a scandal. This isn’t the twentieth century. So if you’re trying to scare us, it isn’t working.”

The cigarette snapped between Araman's fingers and he tossed it away violently. He said, "Damn it, I don't know what to do. It's never been like this before. . . . Look! You three fools know nothing of what you're trying to do. You understand nothing. Will you listen to me?"

"Oh, we'll listen," said Nimmo grimly.

(Foster sat silently, eyes angry, lips compressed. Potterley's hands writhed like two intertwined snakes.)

Araman said, "The past to you is the dead past. If any of you have discussed the matter, it's dollars to nickels you've used that phrase. The dead past. If you knew how many times I've heard those three words, you'd choke on them, too.

"When people think of the past, they think of it as dead, far away and gone, long ago. We encourage them to think so. When we report time viewing, we always talk of views centuries in the past, even though you gentlemen know seeing more than a century or so is impossible. People accept it. The past means Greece, Rome, Carthage, Egypt, the Stone Age. The deader the better.

"Now you three know a century or a little more is the limit, so what does the past mean to you? Your youth. Your first girl. Your dead mother. Twenty years ago. Thirty years ago. Fifty years ago. The deader the better. . . . But when does the past really begin?"

He paused in anger. The others stared at him and Nimmo stirred uneasily.

"Well," said Araman, "when did it begin? A year ago? Five minutes ago? One second ago? Isn't it obvious that the past begins an instant ago? The dead past is just another name for the living present. What if you focus the chronoscope in the past of one-hundredth of a second ago? Aren't you watching the present? Does it begin to sink in?"

Nimmo said, "Damnation."

"Damnation," mimicked Araman. "After Potterley came to me with his story night before last, how do you suppose I checked up on both of you? I did it with the chronoscope, spotting key moments to the very instant of the present."

“And that’s how you knew about the safety-deposit box?” said Foster.

“And every other important fact. Now what do you suppose would happen if we let news of a home chronoscope get out? People might start out by watching their youth, their parents and so on, but it wouldn’t be long before they’d catch on to the possibilities. The housewife will forget her poor, dead mother and take to watching her neighbor at home and her husband at the office. The businessman will watch his competitor; the employer his employee.

“There will be no such thing as privacy. The party line, the prying eye behind the curtain will be nothing compared to it. The video stars will be closely watched at all times by everyone. Every man his own peeping Tom and there’ll be no getting away from the watcher. Even darkness will be no escape because chronoscopy can be adjusted to the infrared and human figures can be seen by their own body heat. The figures will be fuzzy, of course, and the surroundings will be dark, but that will make the titillation of it all the greater, perhaps. . . . Hmp, the men in charge of the machine now experiment sometimes in spite of the regulations against it.”

Nimmo seemed sick. “You can always forbid private manufacture-”

Araman turned on him fiercely. “You can, but do you expect it to do good? Can you legislate successfully against drinking, smoking, adultery or gossiping over the back fence? And this mixture of nosiness and prurience will have a worse grip on humanity than any of those. Good Lord, in a thousand years of trying we haven’t even been able to wipe out the heroin traffic and you talk about legislating against a device for watching anyone you please at any time you please that can be built in a home workshop.”

Foster said suddenly, “I won’t publish.”

Potterley burst out, half in sobs, “None of us will talk. I regret-”

Nimmo broke in. “You said you didn’t tab me on the chronoscope, Araman.”

“No time,” said Araman wearily. “Things don’t move any faster on the chronoscope than in real life. You can’t speed it up like the film in a book viewer. We spent a full twenty-four hours trying to catch the important moments during the last six months of Potterley and Foster. There was no time for anything else and it was enough.”

“It wasn’t,” said Nimmo.

“What are you talking about?” There was a sudden infinite alarm on Araman’s face.

“I told you my nephew, Jonas, had called me to say he had put important information in a safety-deposit box. He acted as though he were in trouble. He’s my nephew. I had to try to get him off the spot. It took a while, then I came here to tell him what I had done. I told you when I got here, just after your man conked me that I had taken care of a few items.”

“What? For Heaven’s sake-”

“Just this: I sent the details of the portable chronoscope off to half a dozen of my regular publicity outlets.”

Not a word. Not a sound. Not a breath. They were all past any demonstration.

“Don’t stare like that,” cried Nimmo. “Don’t you see my point? I had popular publication rights. Jonas will admit that. I knew he couldn’t publish scientifically in any legal way. I was sure he was planning to publish illegally and was preparing the safety-deposit box for that reason, i thought if I put through the details prematurely, all the responsibility would be mine. His career would be saved. And if I were deprived of my science-writing license as a result, my exclusive possession of the chronometric data would set me up for life. Jonas would be angry, I expected that, but I could explain the motive and we would split the take fifty-fifty. . . Don’t stare at me like that. How did I know-”

“Nobody knew anything,” said Araman bitterly, “but you all just took it for granted that the government was stupidly bureaucratic, vicious, tyrannical, given to suppressing research for the hell of it. It never occurred to any of you that we were trying to protect mankind as best we could.”

“Don’t sit there talking,” wailed Potterley. “Get the names of the people who were told-”

“Too late,” said Nimmo, shrugging. “They’ve had better than a day. There’s been time for the word to spread. My outfits will have called any number of physicists to check my data before going on with it and they’ll call one another to pass on the news. Once scientists put neutrinos and pseudo-gravities together, home chronoscopy becomes obvious. Before the week is

out, five hundred people will know how to build a small chronoscope and how will you catch them all?" His plum cheeks sagged. "I suppose there's no way of putting the mushroom cloud back into that nice, shiny uranium sphere."

Araman stood up. "We'll try, Potterley, but I agree with Nimmo. It's too late. What kind of a world we'll have from now on, I don't know, I can't tell, but the world we know has been destroyed completely. Until now, every custom, every habit, every tiniest way of life has always taken a certain amount of privacy for granted, but that's all gone now."

He saluted each of the three with elaborate formality.

"You have created a new world among the three of you. I congratulate you. Happy goldfish bowl to you, to me, to everyone, and may each of you fry in hell forever. Arrest rescinded."

Further Enrichment: Reading and Viewing

<p>Following on from the taster session, finish reading 'Oryx and Crake' by Margaret Atwood.</p>	
<p>Read one of Isaac Asimov's novels such as 'The Caves Of Steel'.</p>	
<p>Read Philip K Dick's novel, 'Do Androids Dream Of Electric Sheep'.</p>	
<p>Google the word 'dystopia' and develop your understanding of this key concept.</p>	
<p>Watch the groundbreaking 1927 dystopian film, 'Metropolis'.</p>	
<p>Watch the classic 1982 film, 'Blade Runner'.</p>	
<p>Watch the recent Netflix film, 'The Running Man'.</p>	

Possible answers...

Franchise

1. Husband, housewife, child, in-law, simple job.
2. The police, Agent Handley, Norman's discomfort at the idea of voting.
3. A computer selects the year's most typical voter, asks them questions, and then decides which candidate they would prefer. Only men between 20 and 60 can vote.
4. The story suggests that this process is totally democratic but Asimov actually means the opposite (it's the fictional government's view not the author's). Asimov's message is that we need to protect democracy, not let computers make decisions for humankind, and be aware of the problems with algorithms.

The Dead Past

1. University research has increasingly depended on government and business funding, until the only things that are researched are what the government wants researching. There is no room for individual intellectual exploration.
2. The death of their daughter, Laurel. They still think about her and blame themselves for her death. They imagine what she'd be like if she was now grown up.
3. It's been manipulated by the government.
4. He's told he cannot continue his research, he will be under permanent surveillance, and is threatened with life imprisonment without trial.
5. People will just spy on each other in the immediate past. They'll stop caring about anything else and society will lose any understanding of privacy.