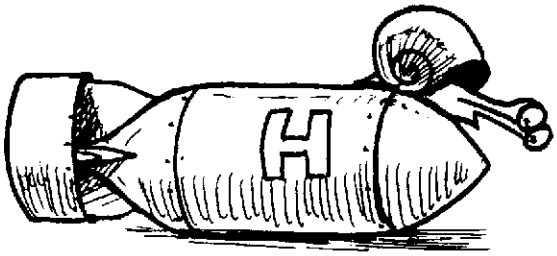
Savoir sans Frontières

HAVE A NICE APOCALYPSE

Jean-Pierre Petit



Translated by John Murphy

http://www.savoir-sans-frontieres.com

The Association Knowledge without Borders, founded and chaired by Professor Jean-Pierre Petit, astrophysicist, aims at spreading scientific and technical knowledge in as many countries as possible and in as many languages as possible. To this end, all his popular scientific works, which cover a period of thirty years, and more particularly the illustrated albums he has created, are now freely accessible. Anyone is now free to duplicate the present file, either in digital form or in the form of printed copies and circulate these copies to libraries , within the context of schools or universities or associations whose aims would be the same as the association , provided that they do not derive any profit from this circulation and that they do not have any political, sectarian or confessional connotations. These pdf files may also be put on line in the computer networks of school and university libraries.

Jean-Pierre Petit intends to create numerous other works which will be accessible to a larger audience. Even illiterate people will be able to read them because the written parts will “speak” when the readers click on them. Thus it will be possible to use these works to support literacy schemes. Other albums will be "bilingual" in so far as it will be possible to switch from one language to another selected language with a mere click. Hence another tool made available to develop language skills.

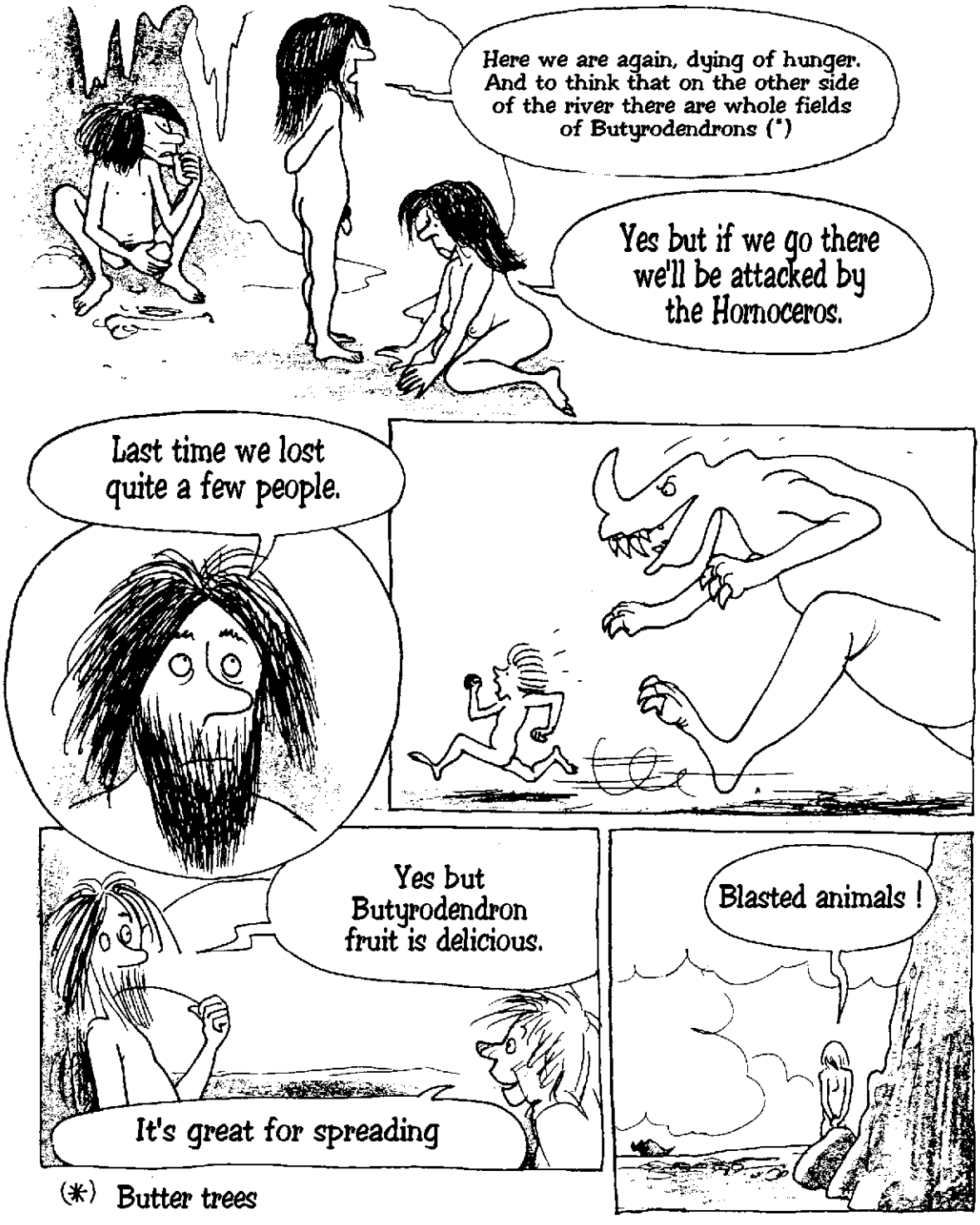
Jean-Pierre Petit was born in 1937. He made his career in French research. He worked as a plasma physicist, he directed a computer science centre, he has created softwares, he has published hundreds of articles in scientific magazines, dealing with subjects ranging from fluid mechanics to theoretical cosmology. He has published about thirty books which have been translated in numerous languages.

The association can be contacted on the following internet site:

http://savoir-sans-frontieres.com

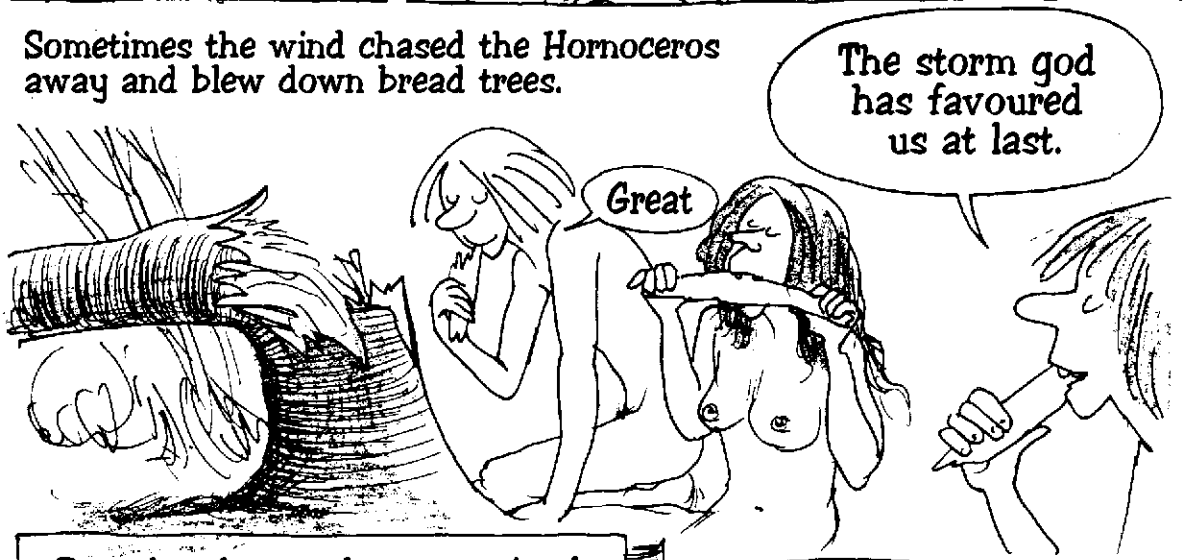
PROLOGUE

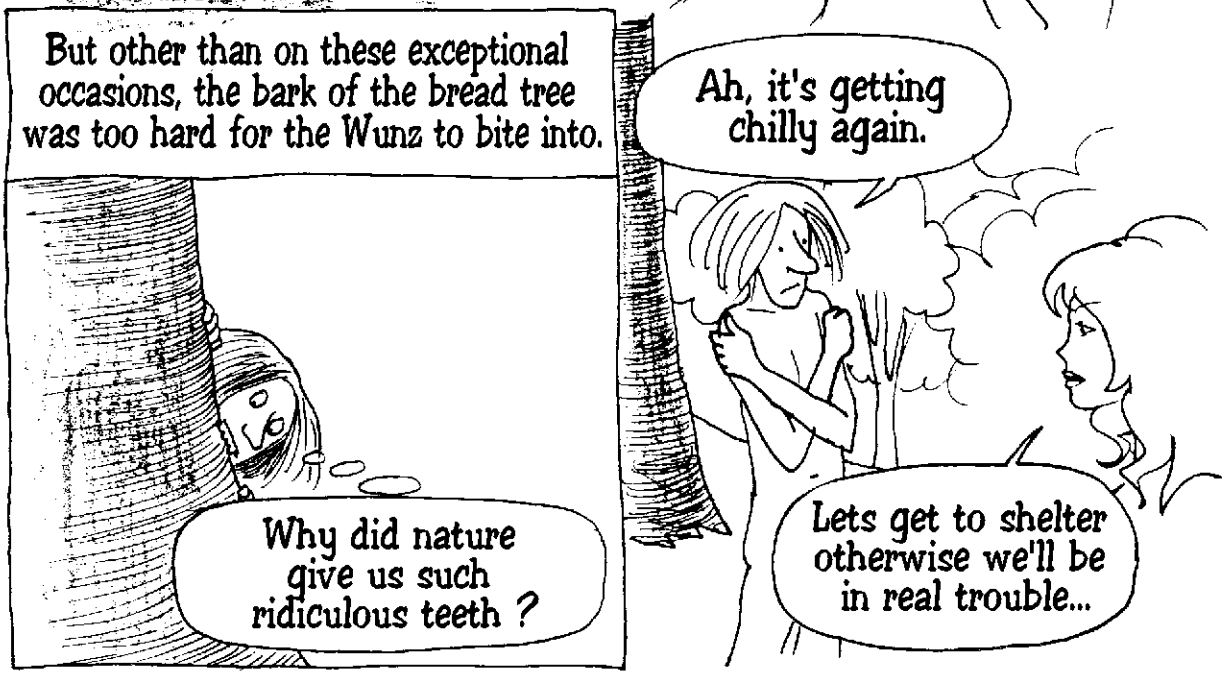
The initial continent, a thin crust of solidified magma, had started to break up. On one of these floating rocks live the Wunz.

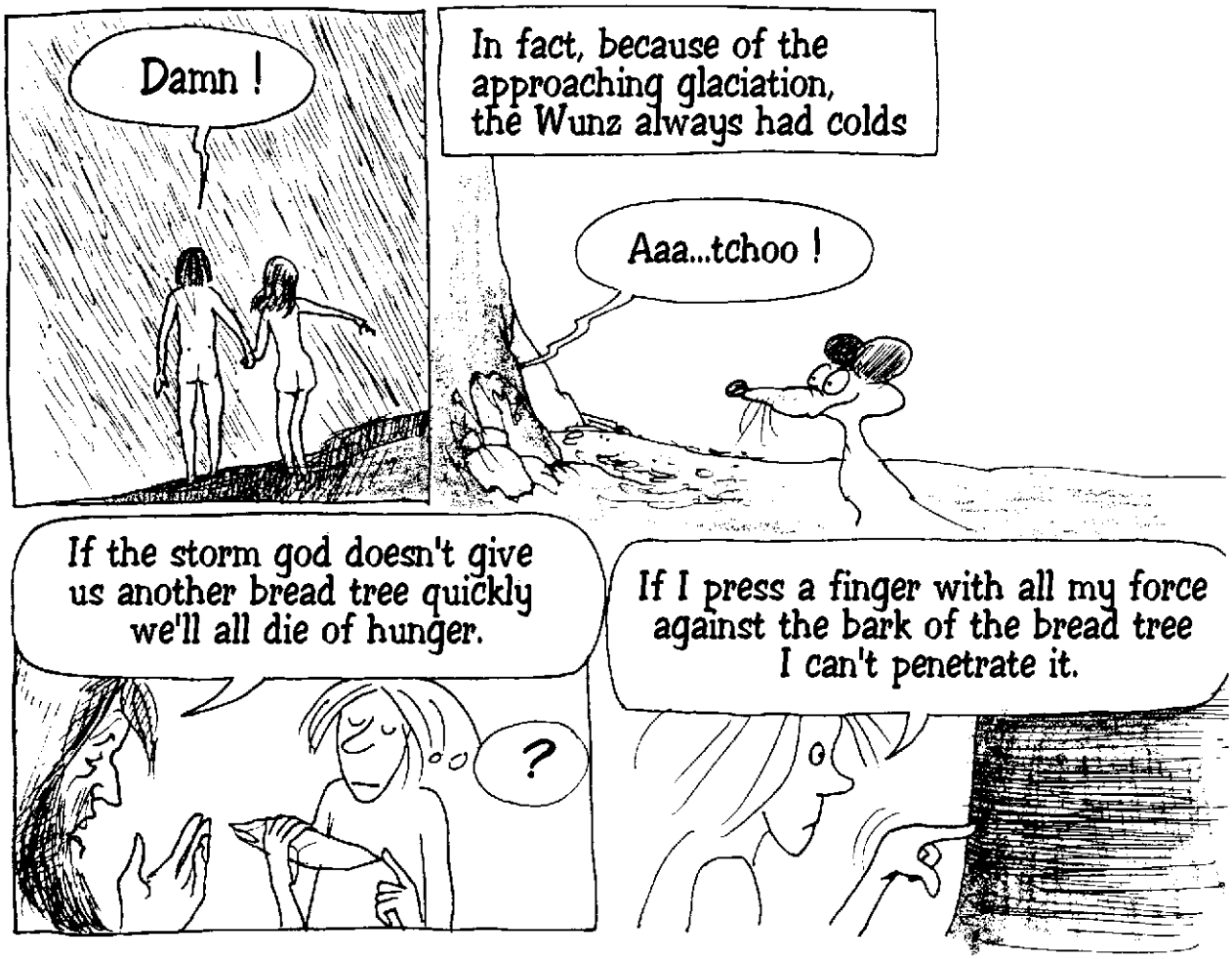


(*) Butter trees

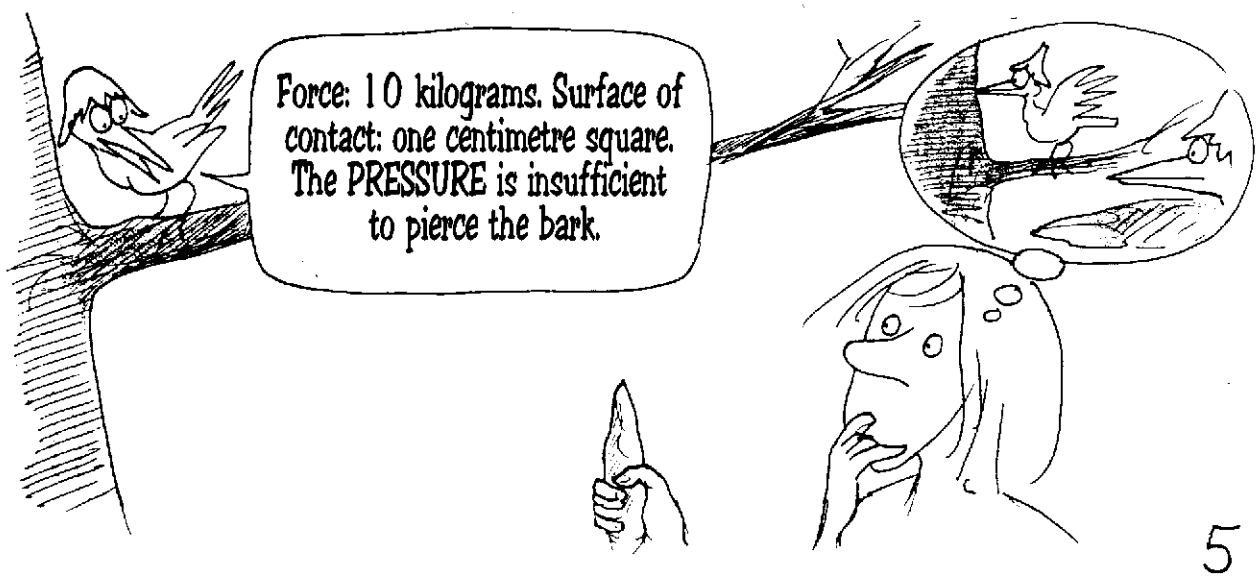
Sometimes the wind chased the Hornoceros away and blew down bread trees.

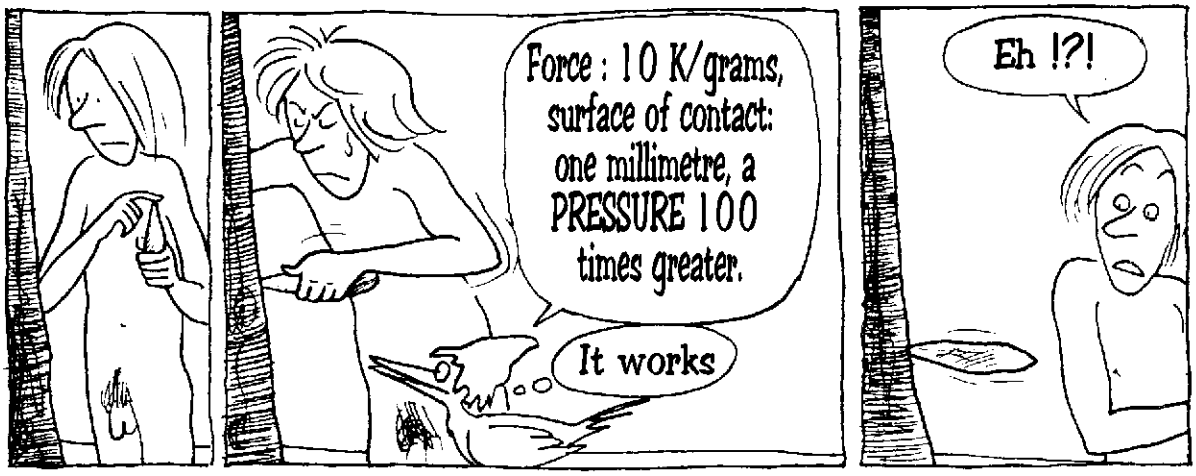


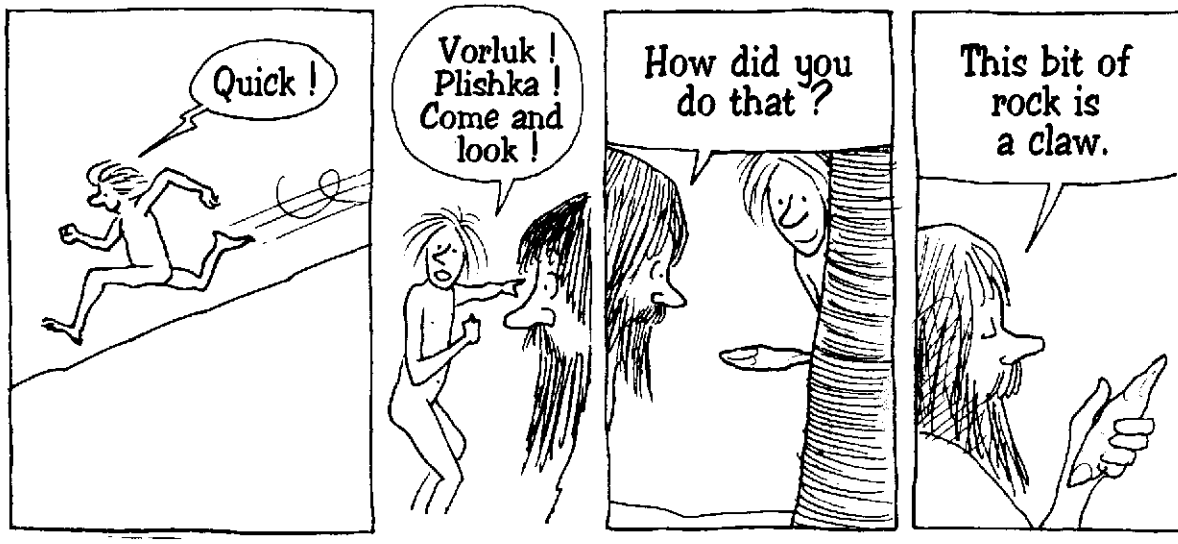


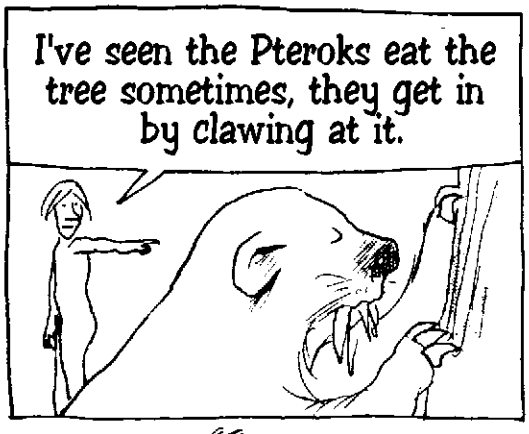


THE BIRTH OF TECHNOLOGY

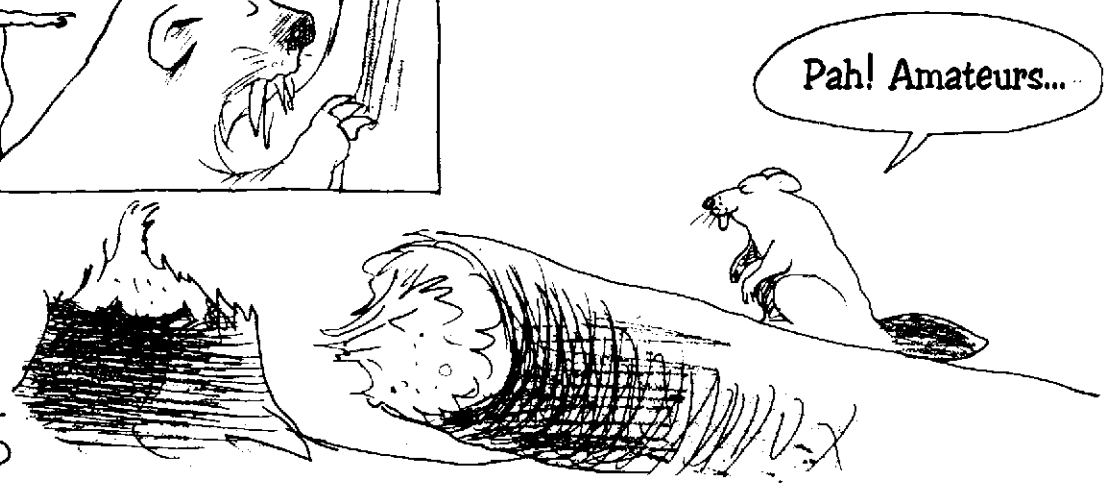






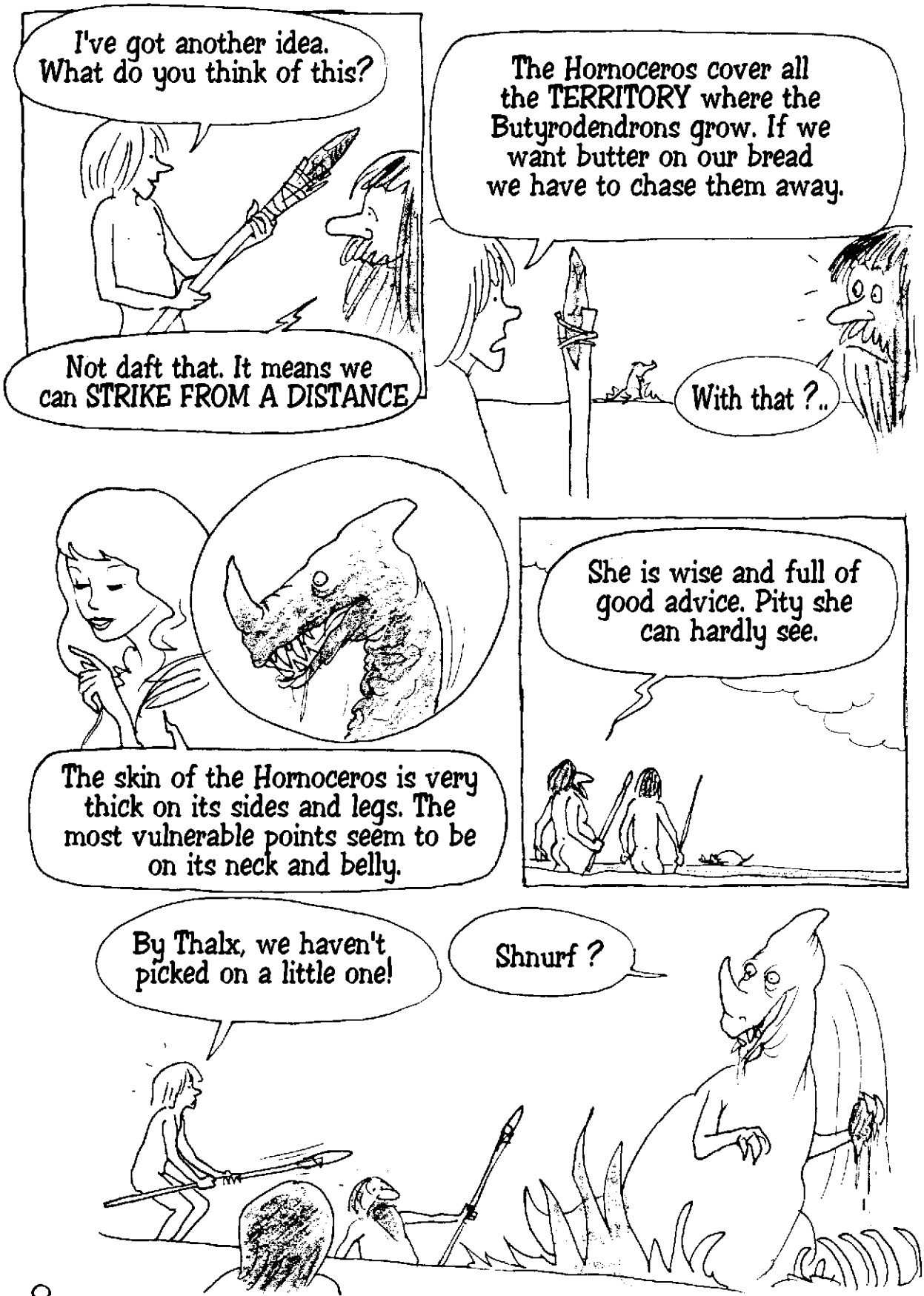


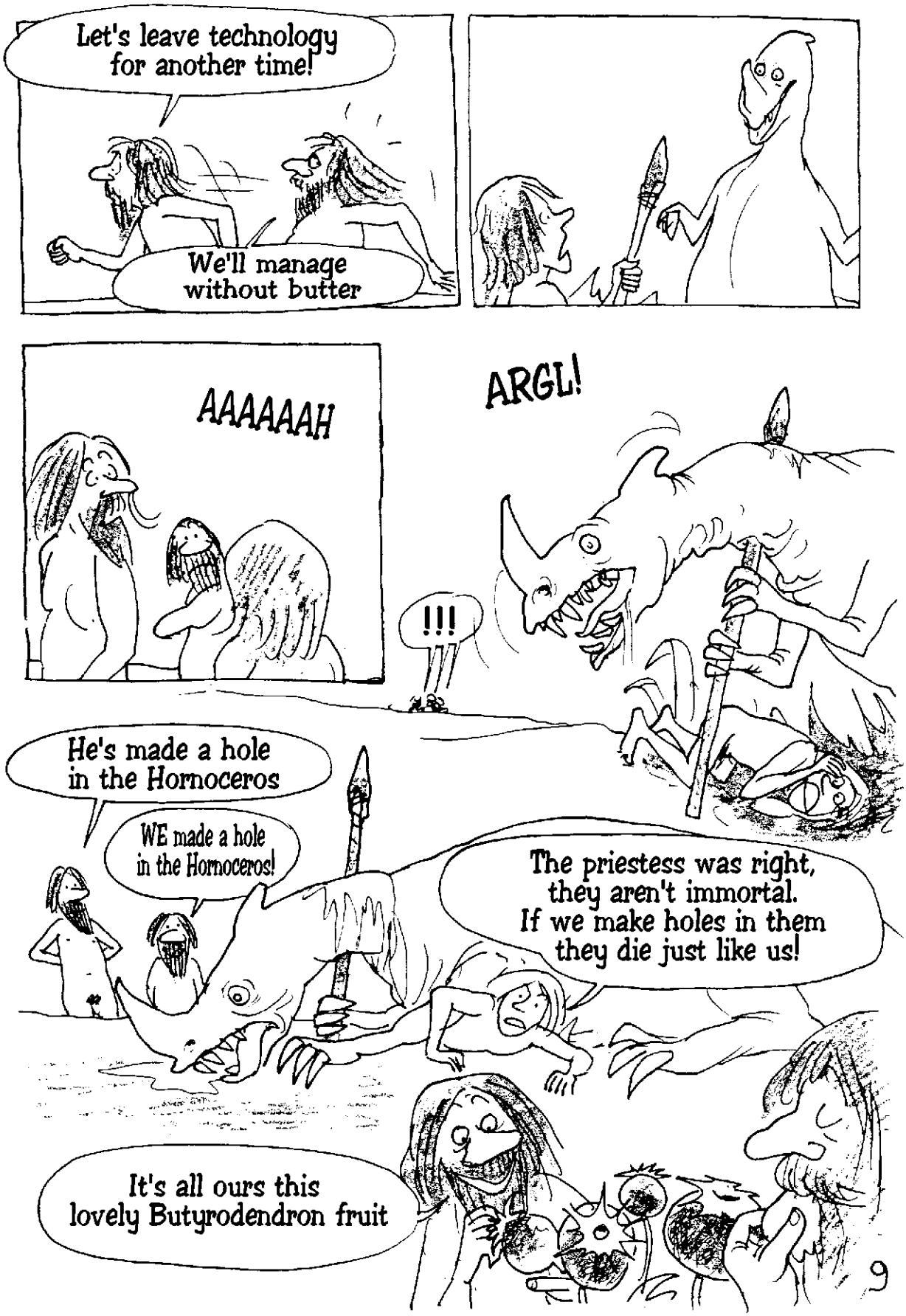
In no time at all the tribe was able to cut a bread tree in slices.



TOOL-ARMS

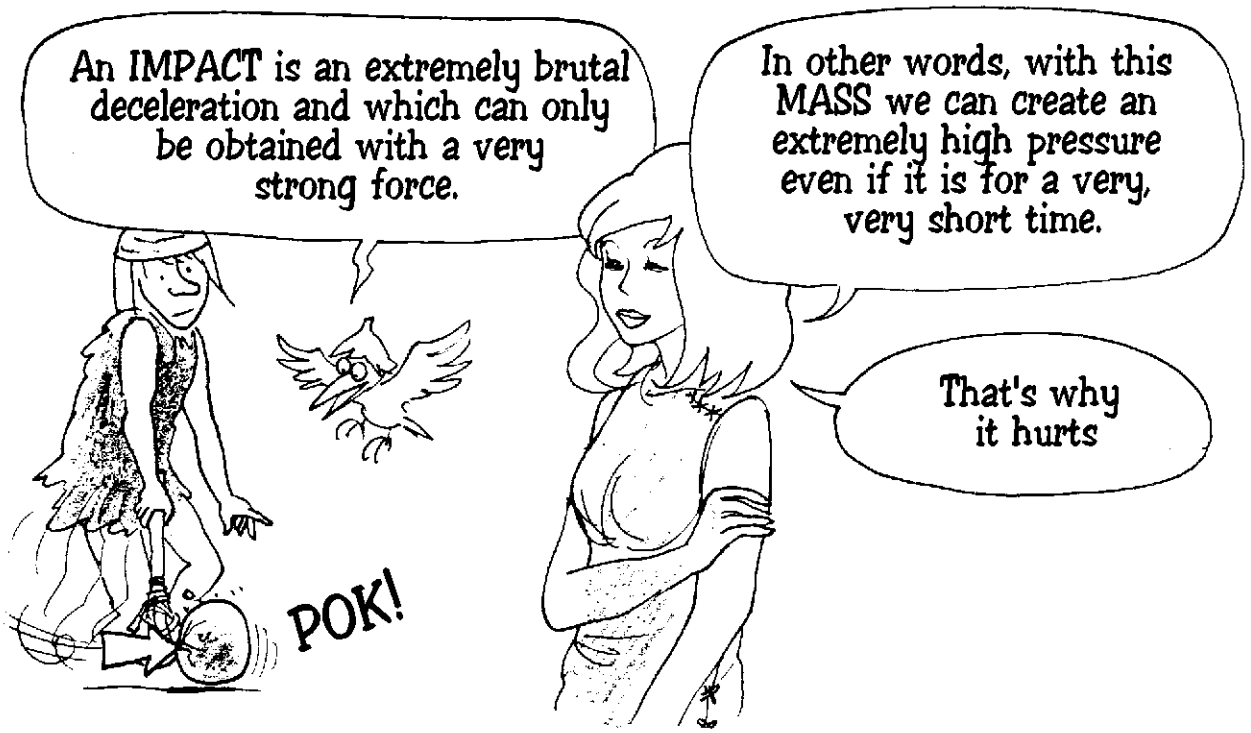

Look, if I fix these sharp chips to a plank with resin we will be able to cut the bread tree into slices
Ooh good, sandwiches !
Yes, but the the butter is over there...
Attack the Hornoceros, me?...
I want sandwiches, I want sandwiches!
The Hornoceros has big teeth and claws
But we've got teeth and claws too
I don't know. Like this ?..
With resin?
But how are you going to attach them to your fingers and mouth?
You're all primates. When we cut down the bread tree we didn't have pieces of rock in our mouths!
True, we were holding them.


I've got another idea. What do you think of this?
Not daft that. It means we can STRIKE FROM A DISTANCE
The Hornoceros cover all the TERRITORY where the Butyrodendrons grow. If we want butter on our bread we have to chase them away.
With that ?..
The skin of the Hornoceros is very thick on its sides and legs. The most vulnerable points seem to be on its neck and belly.
She is wise and full of good advice. Pity she can hardly see.
By Thalx, we haven't picked on a little one!
Shnurf ?

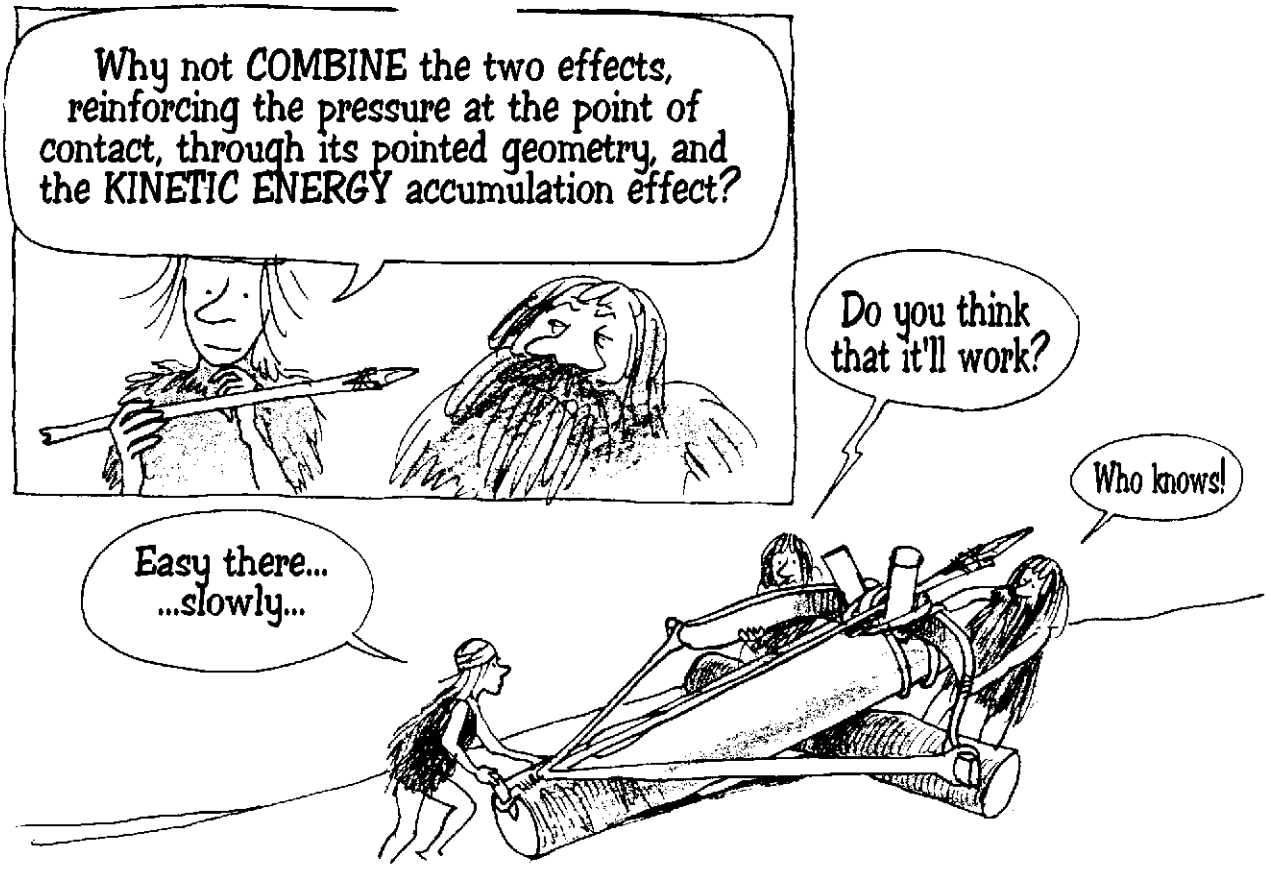

Let's leave technology for another time!
We'll manage without butter
AAAAAAH
ARGL!
!!!
He's made a hole in the Hornoceros
WE made a hole in the Hornoceros!
The priestess was right, they aren't immortal. If we make holes in them they die just like us!
It's all ours this lovely Butyrodendron fruit


This event had unforeseen consequences
Hey, this doesn't taste bad at all.
What, that red stuff?
Let me get some too!
Let go of that bit !
No, it's mine!
You're annoying me!
The Wunz decimated the Hornoceros and the savannah was all theirs, but one day...
What's that for goodness sake ?
Is that the head or the tail?

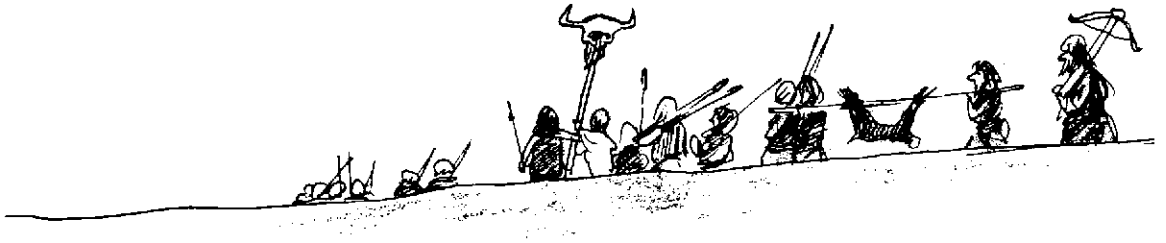
(*) It's an ANKYLOSAURUS

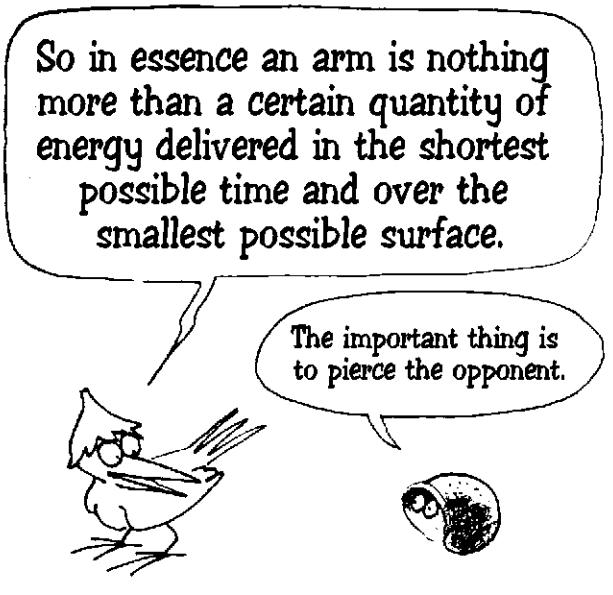


THROWING WEAPONS

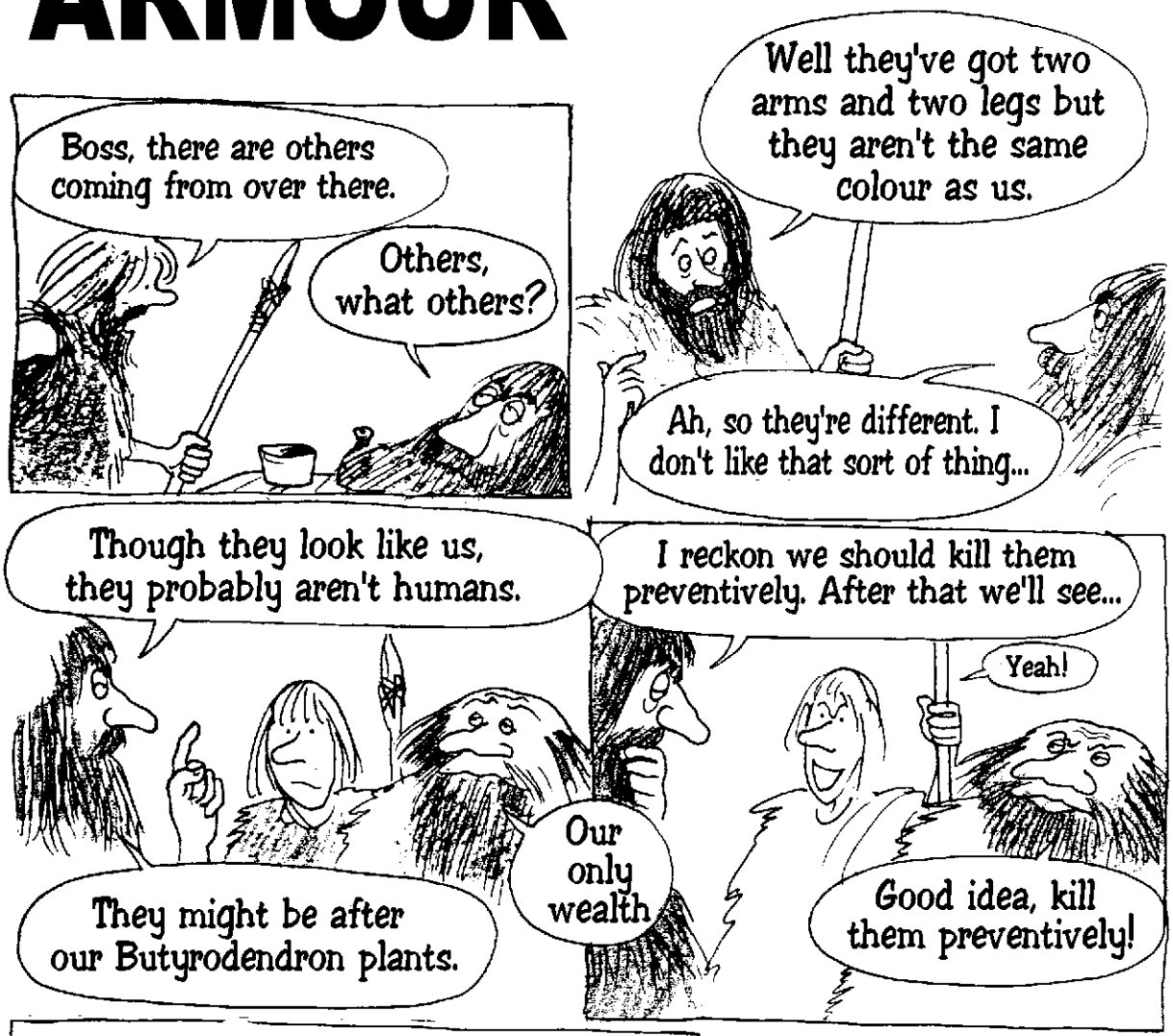


From then on, things advanced rapidly

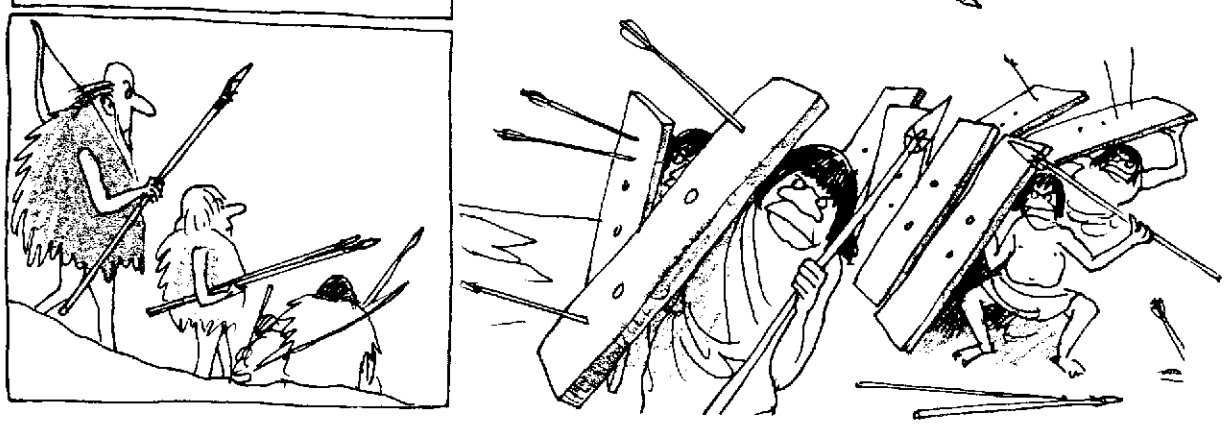


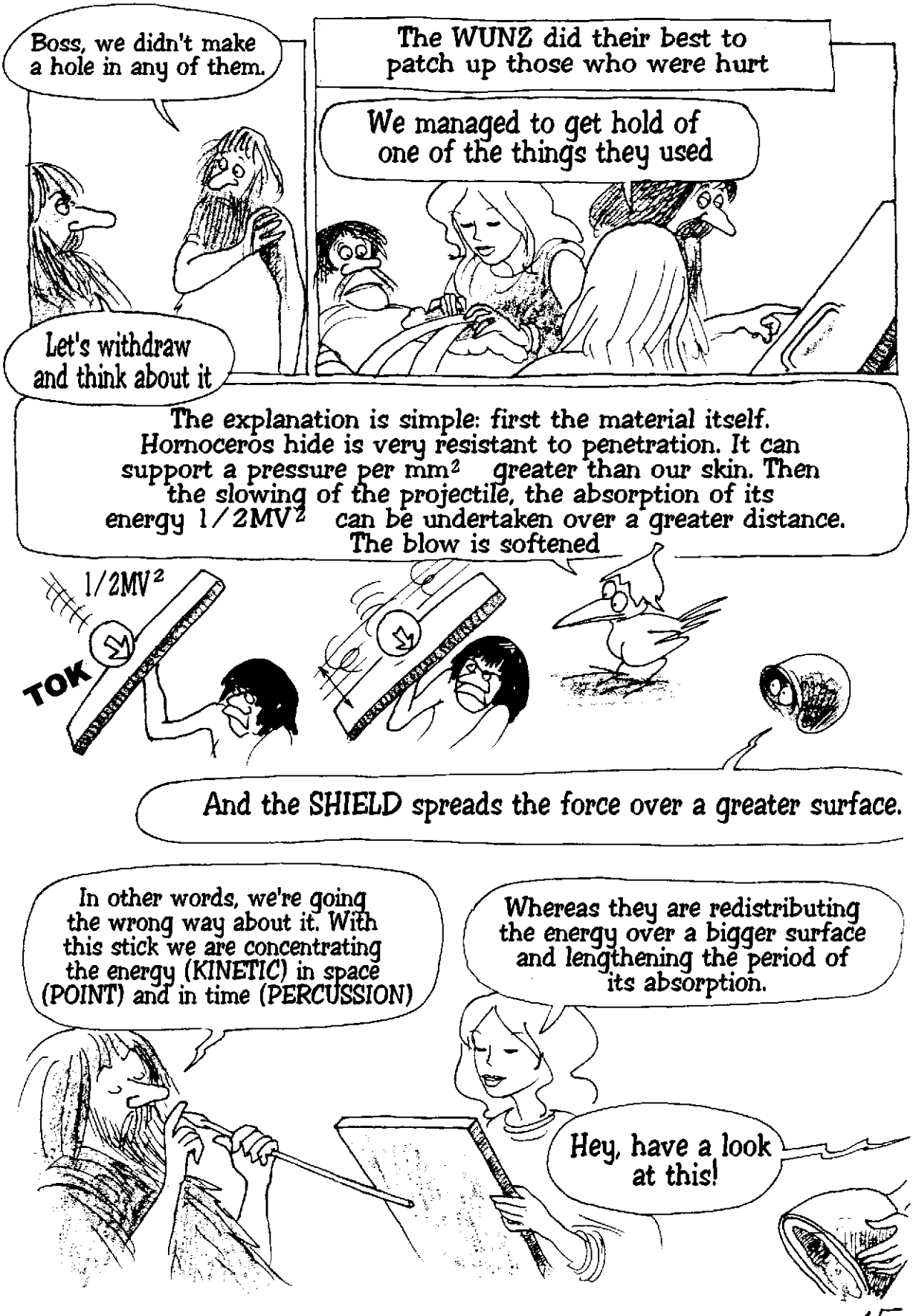


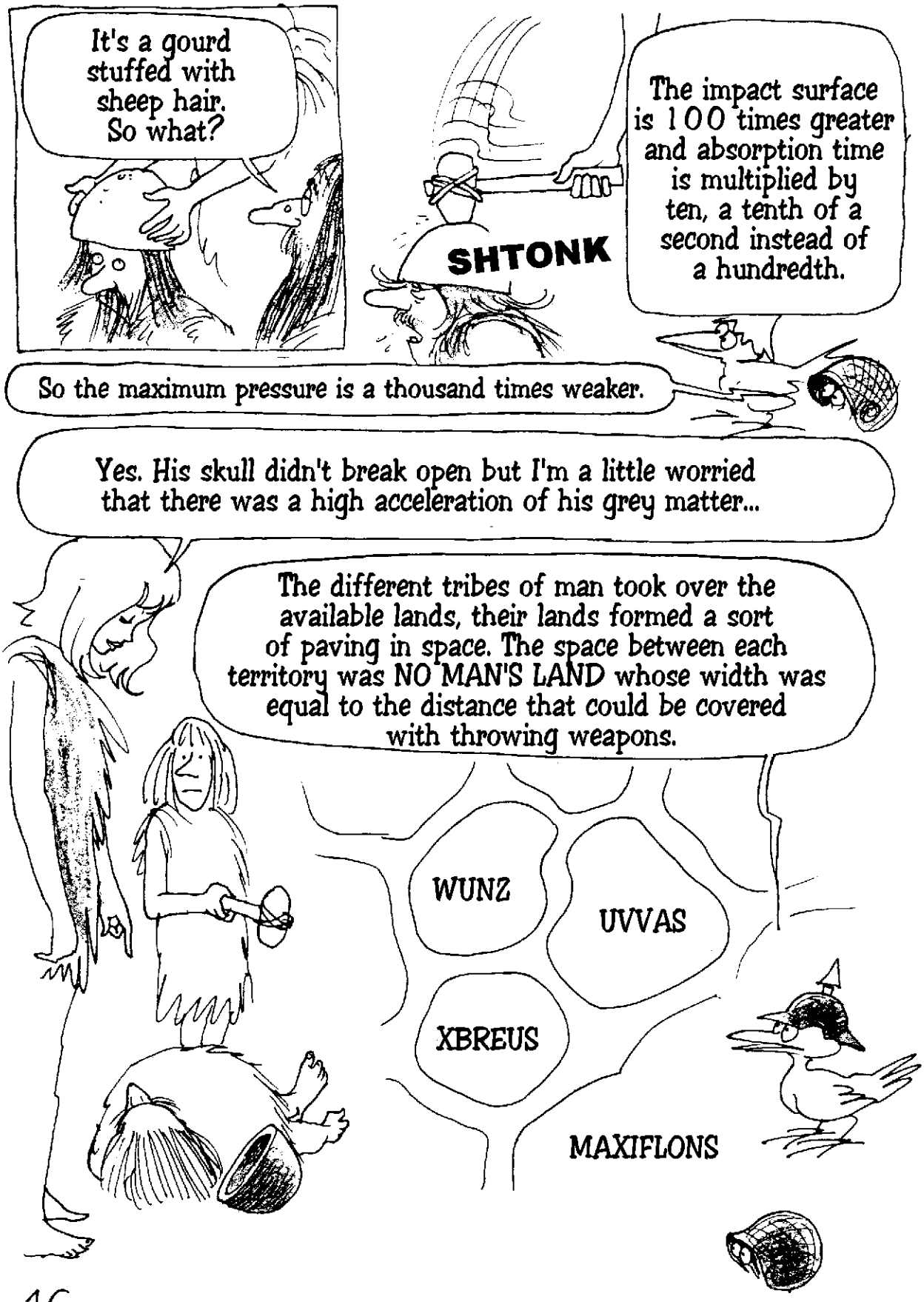
ARMOUR



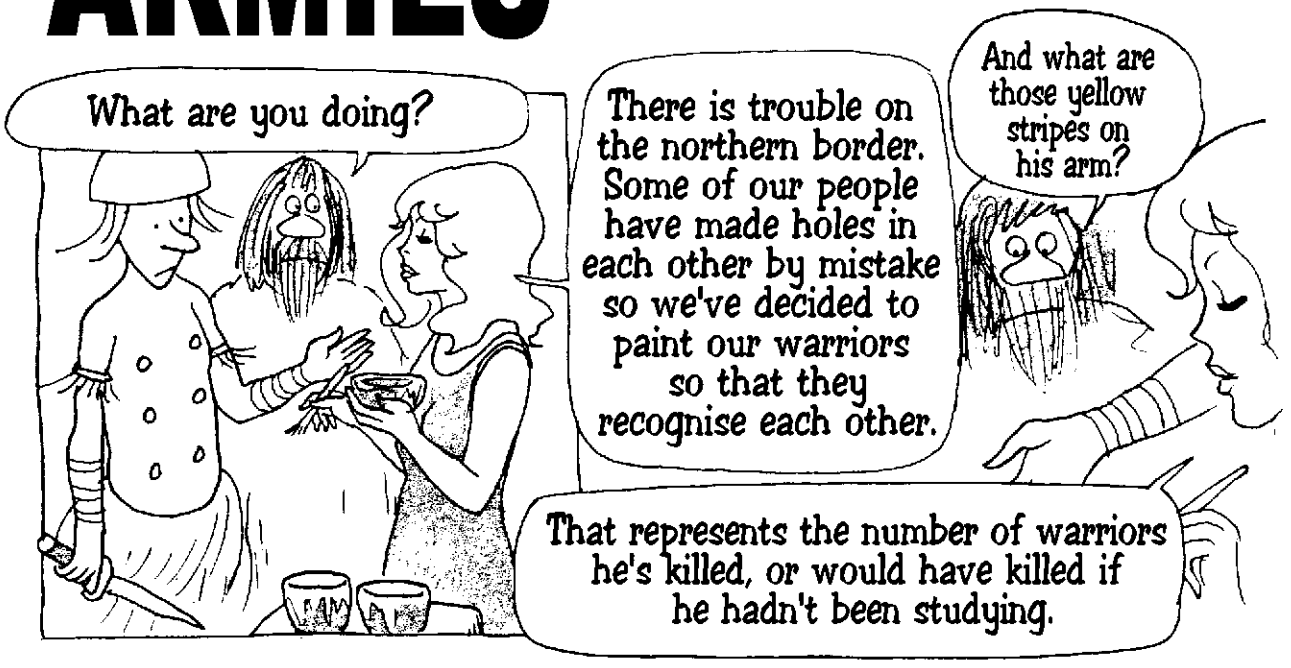
A detachment from the WUNZ tribe was sent out to meet the UVVAS who had just penetrated their TERRITORY.




Boss, we didn't make a hole in any of them.
Let's withdraw and think about it
The WUNZ did their best to patch up those who were hurt
We managed to get hold of one of the things they used
The explanation is simple: first the material itself. Hornoceros hide is very resistant to penetration. It can support a pressure per mm² greater than our skin. Then the slowing of the projectile, the absorption of its energy 1/2MV² can be undertaken over a greater distance. The blow is softened
1/2MV²
TOK
And the SHIELD spreads the force over a greater surface.
In other words, we're going the wrong way about it. With this stick we are concentrating the energy (KINETIC) in space (POINT) and in time (PERCUSSION)
Whereas they are redistributing the energy over a bigger surface and lengthening the period of its absorption.
Hey, have a look at this!


It's a gourd stuffed with sheep hair. So what?
SHTONK
The impact surface is 100 times greater and absorption time is multiplied by ten, a tenth of a second instead of a hundredth.
So the maximum pressure is a thousand times weaker.
Yes. His skull didn't break open but I'm a little worried that there was a high acceleration of his grey matter...
The different tribes of man took over the available lands, their lands formed a sort of paving in space. The space between each territory was NO MAN'S LAND whose width was equal to the distance that could be covered with throwing weapons.
WUNZ
UVVAS
XBREUS
MAXIFLONS

ARMIES

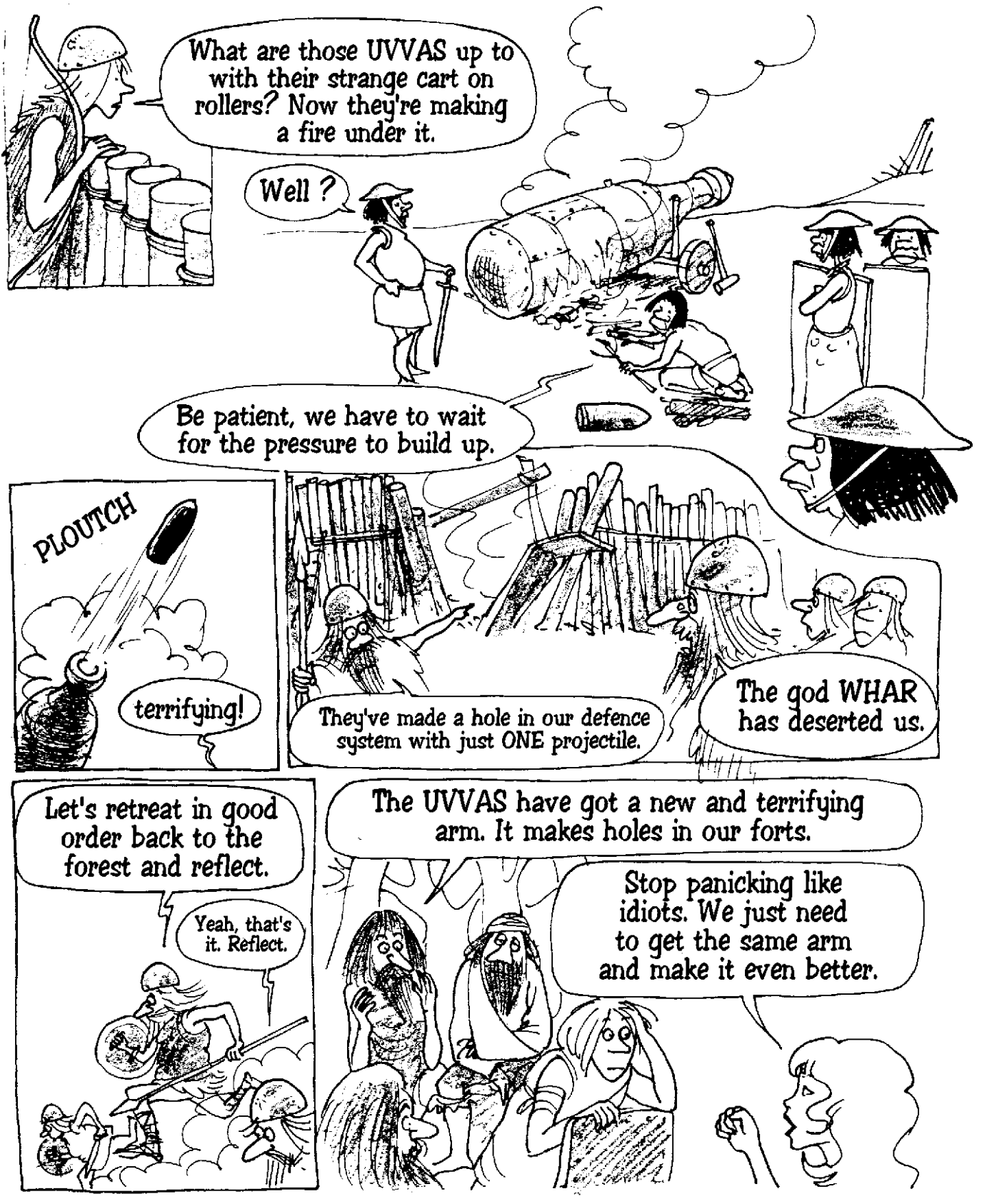


The WUNZ and the UVVAS introduced shields into most parts of their territories. There were occasional battles but they ended up with one side or the other going back to their camp after copious insults had been hurled from both sides.

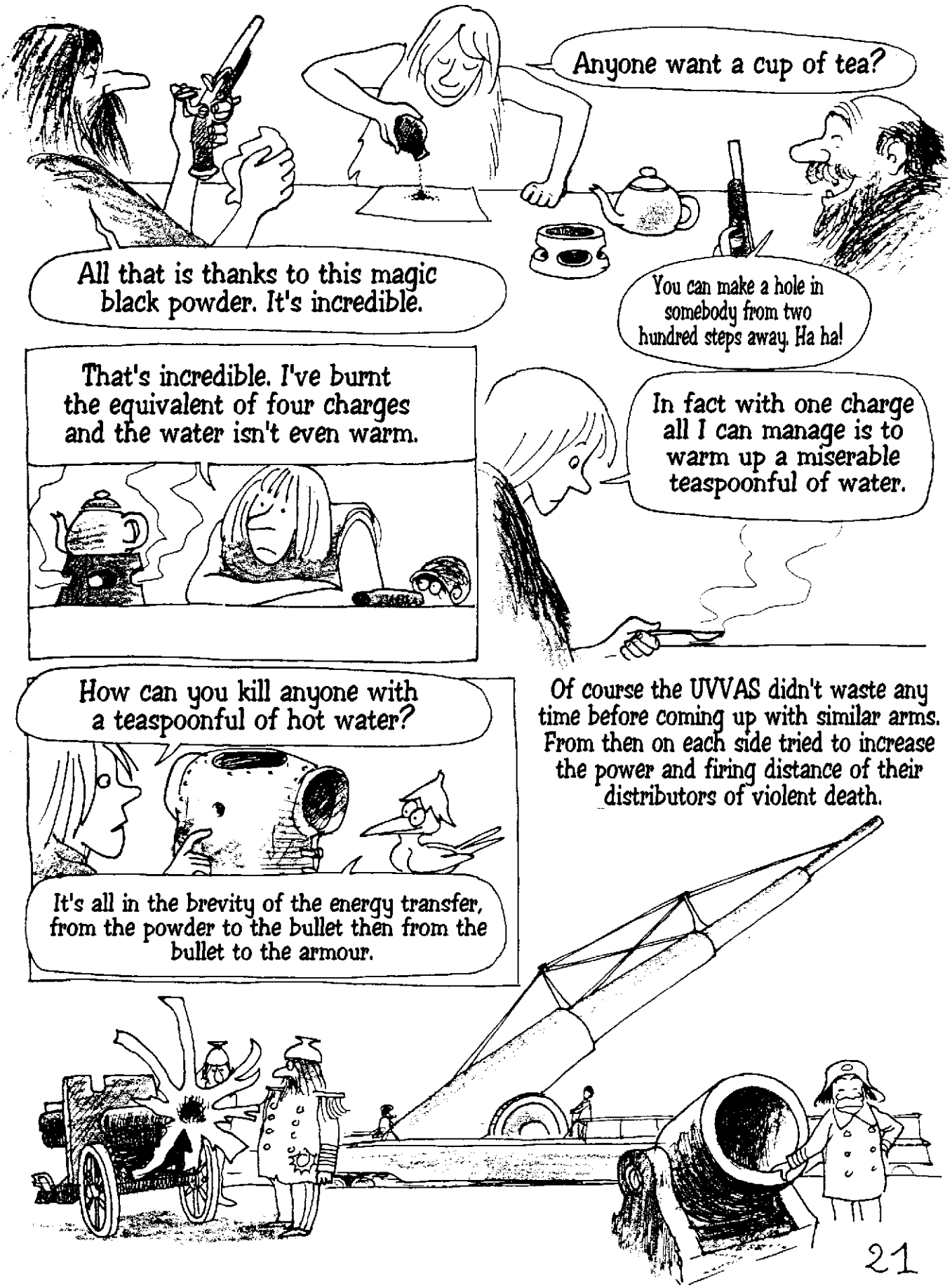
FIREARMS


In the UVVAS' camp
At the guard post a bottle of Tafiak has been left close to the embers of a fire
POK!
SHPOP!
Just a cork !?
Incredible, it's knocked him out completely!
Why?
I think I know...
In a projectile, it is the kinetic energy 1/2MV that is important. But we can stock a lot of energy in a small mass providing we give it a high enough speed.
We've always used our arms to give the starting energy but the Fire God seems to be offering us as much as we want.

In the WUNZ' fortress



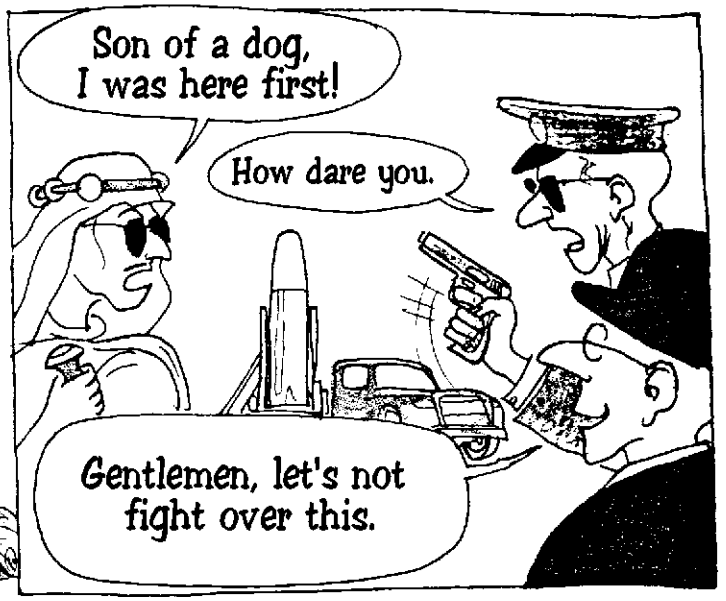
THE ARMS RACE


Anyone want a cup of tea?
All that is thanks to this magic black powder. It's incredible.
You can make a hole in somebody from two hundred steps away. Ha ha!
That's incredible. I've burnt the equivalent of four charges and the water isn't even warm.
In fact with one charge all I can manage is to warm up a miserable teaspoonful of water.
How can you kill anyone with a teaspoonful of hot water?
It's all in the brevity of the energy transfer, from the powder to the bullet then from the bullet to the armour.
Of course the UVVAS didn't waste any time before coming up with similar arms. From then on each side tried to increase the power and firing distance of their distributors of violent death.

MISSILES

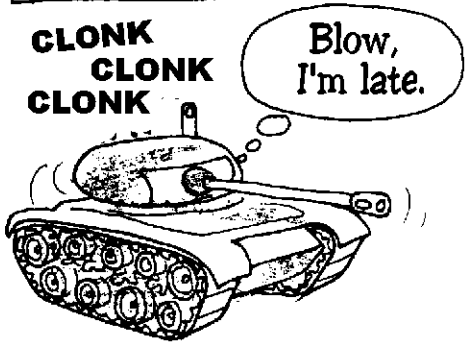

The laws of ballistics show me that the RANGE of an object increases according to the initial speed. However even though I increase the charge I'm not gaining any extra. It doesn't make sense! Why?..
Well, when blanks are fired without a shell, the gas doesn't come out much quicker. So the problem is with the gas.
The gas has to overcome its own inertia
There is no solution!
Ah, except perhaps if I put the charge in the shell and made it so that it got rid of the gas as it accelerates.
Wonderful, it's all going according to calculation.
It is a great progress, from now on it will be possible to directly hit the enemy behind its lines.


My government is ready to buy immediately several of these wonderful objects of DEFENCE
My government too!

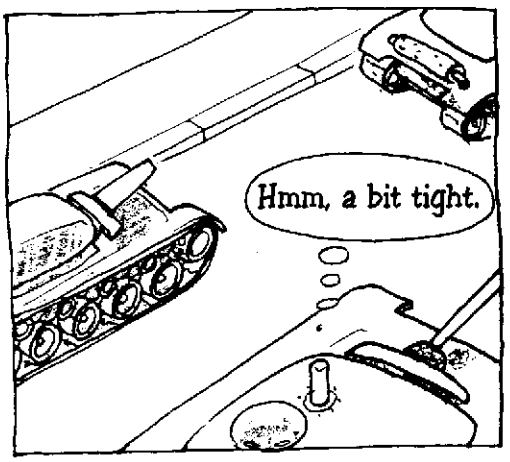

Son of a dog, I was here first!
How dare you.
Gentlemen, let's not fight over this.

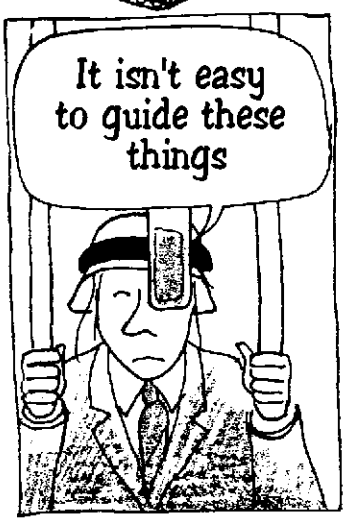
DEFENCE

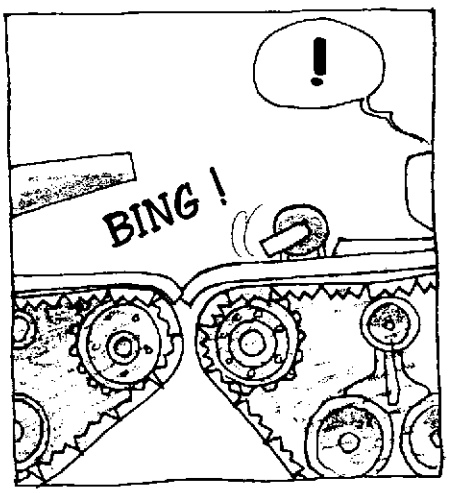

There is plenty for everyone.

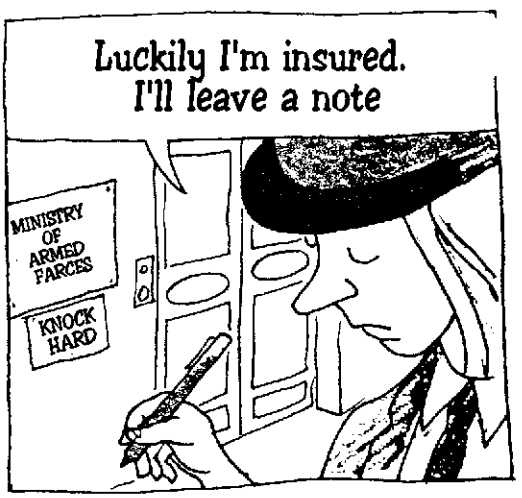

CLONK
CLONK
CLONK
Blow, I'm late.

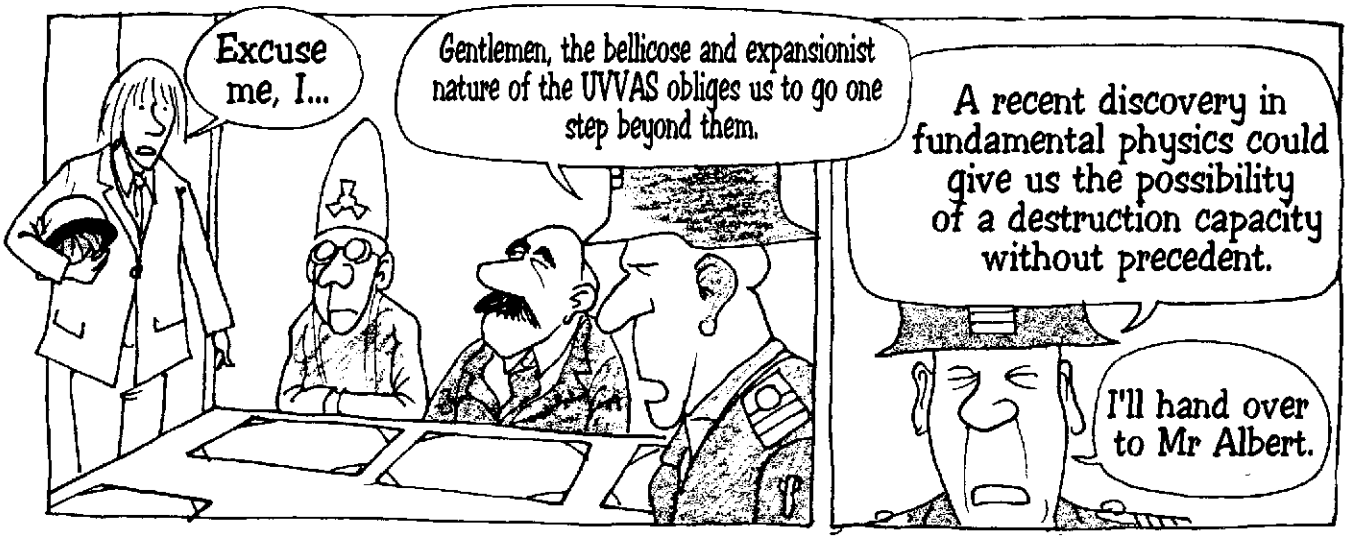

Ah, a parking space.


Hmm, a bit tight.

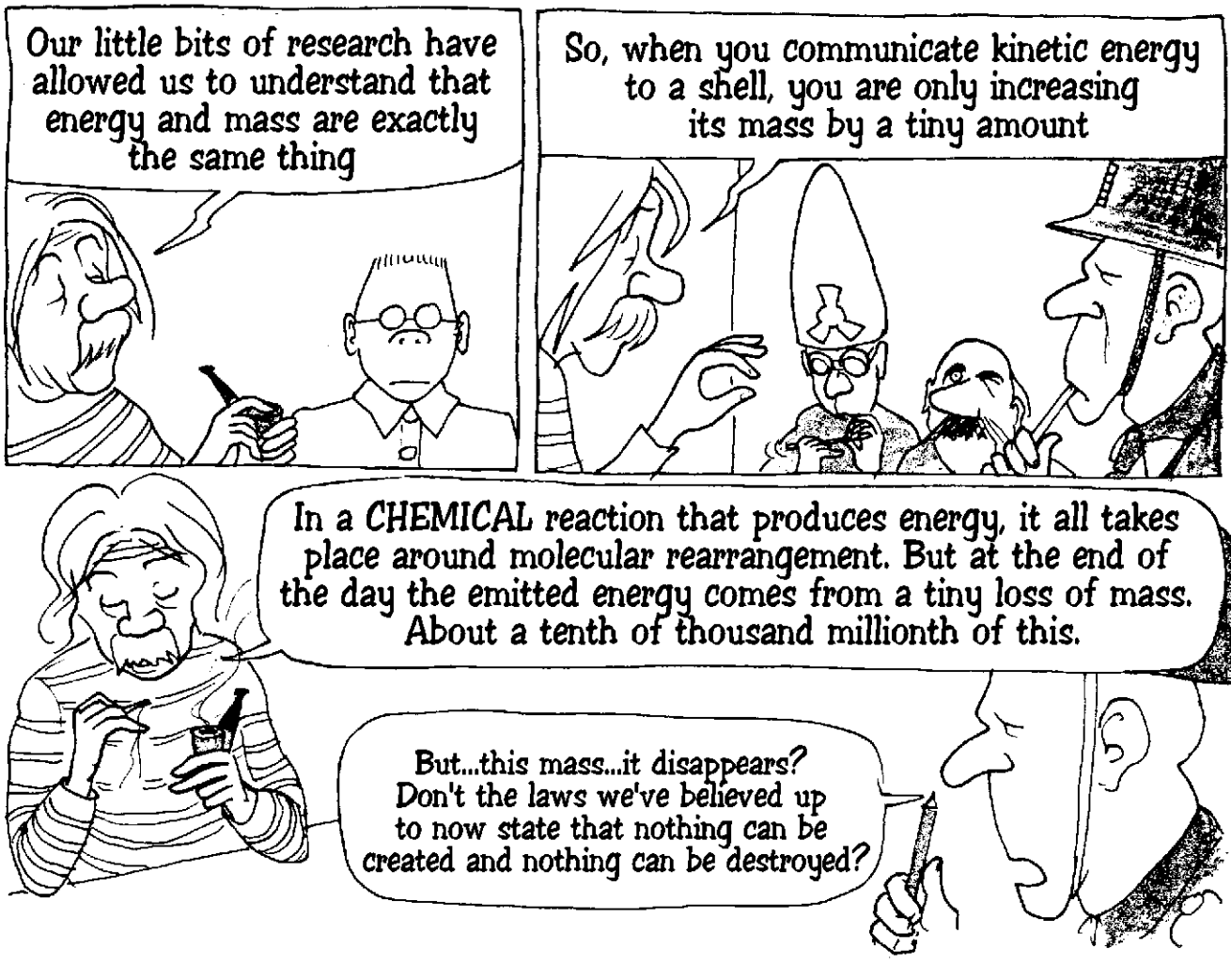

It isn't easy to guide these things

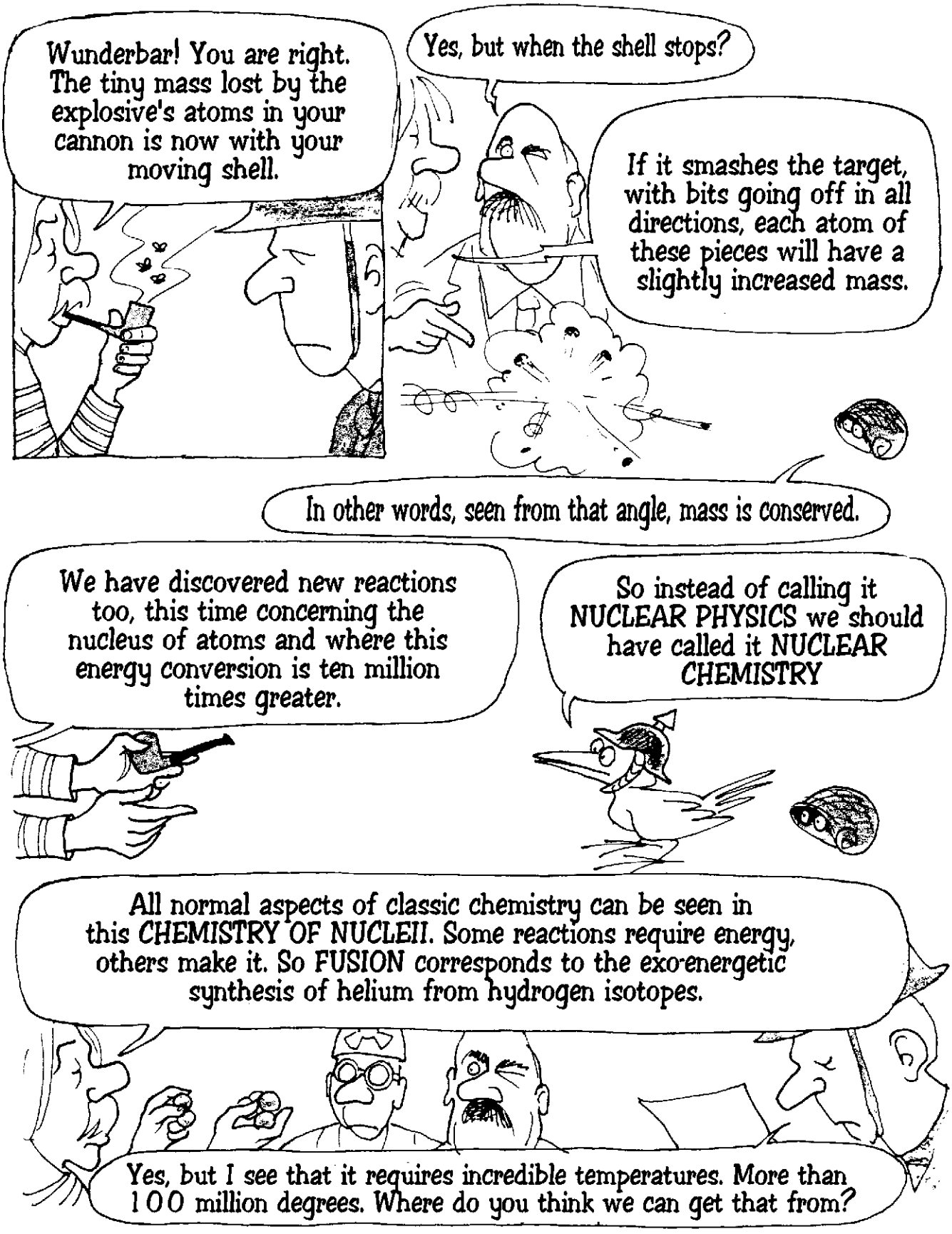

!
BING !


Luckily I'm insured. I'll leave a note
MINISTRY OF ARMED FARCES
KNOCK HARD



ATOMIC WEAPONS




Wunderbar! You are right. The tiny mass lost by the explosive's atoms in your cannon is now with your moving shell.
Yes, but when the shell stops?
If it smashes the target, with bits going off in all directions, each atom of these pieces will have a slightly increased mass.
In other words, seen from that angle, mass is conserved.
We have discovered new reactions too, this time concerning the nucleus of atoms and where this energy conversion is ten million times greater.
So instead of calling it NUCLEAR PHYSICS we should have called it NUCLEAR CHEMISTRY
All normal aspects of classic chemistry can be seen in this CHEMISTRY OF NUCLEII. Some reactions require energy, others make it. So FUSION corresponds to the exo-energetic synthesis of helium from hydrogen isotopes.
Yes, but I see that it requires incredible temperatures. More than 100 million degrees. Where do you think we can get that from?

The sun, which is THE reactor, has left us something for this nuclear chemistry, an auto-unstable atom, Uranium U235.

But if it's unstable, surely should have disappeared naturally millions of years ago.

Something odd there.

In isolation, the Uranium U235 atom does indeed decompose, very slowly, by splitting and emitting a neutron.

FISSION

The neutron thus produced can destabilise another nucleus of Uranium provoking its break-up which releases yet another neutron and so on...

In chemistry we call that an AUTOCATALYTIC reaction.

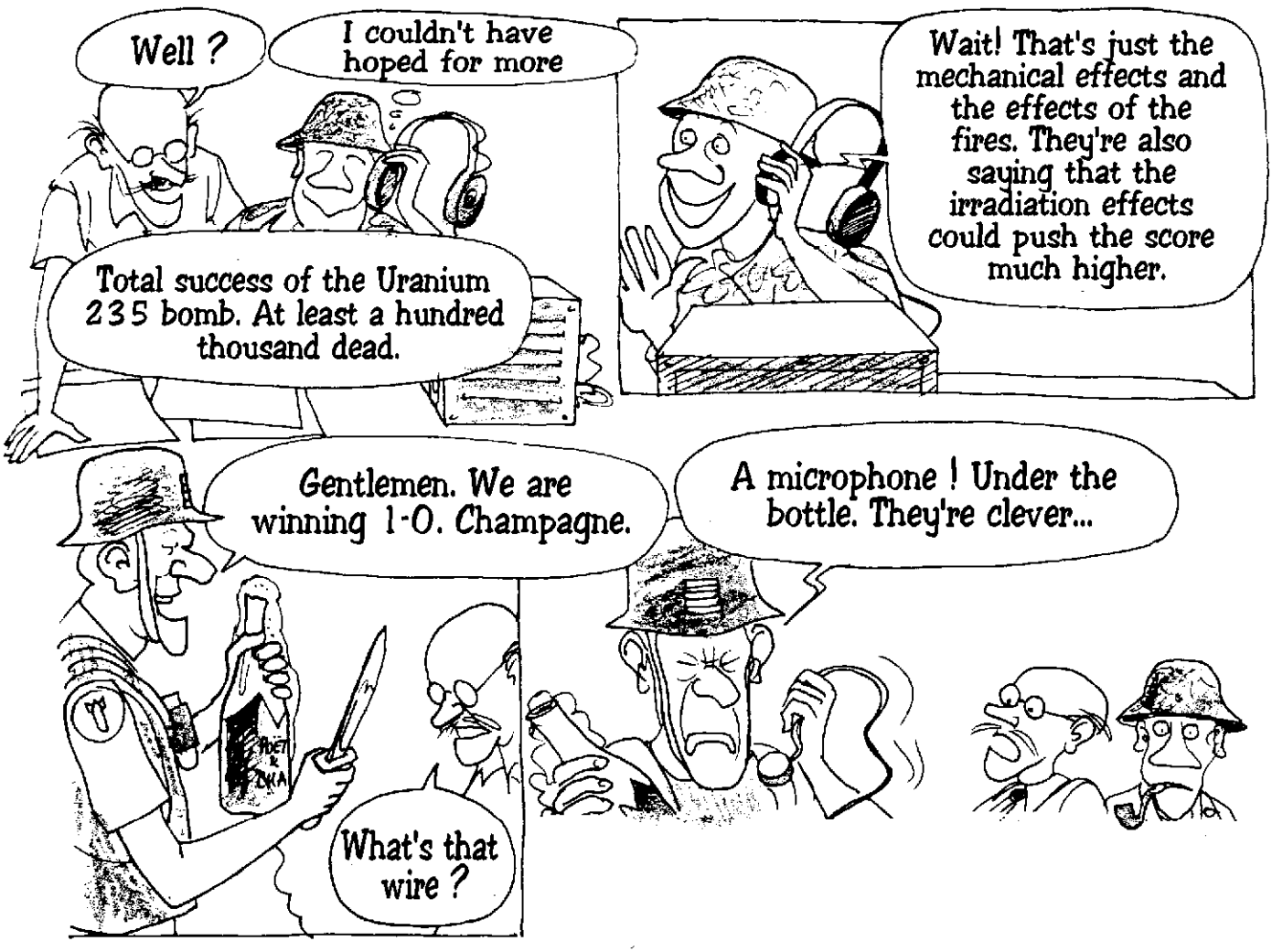
Autocatalytic reaction or CHAIN REACTION, they're the same thing.

But professor, how come this spontaneous chain reaction doesn't take place in this piece of natural Uranium?

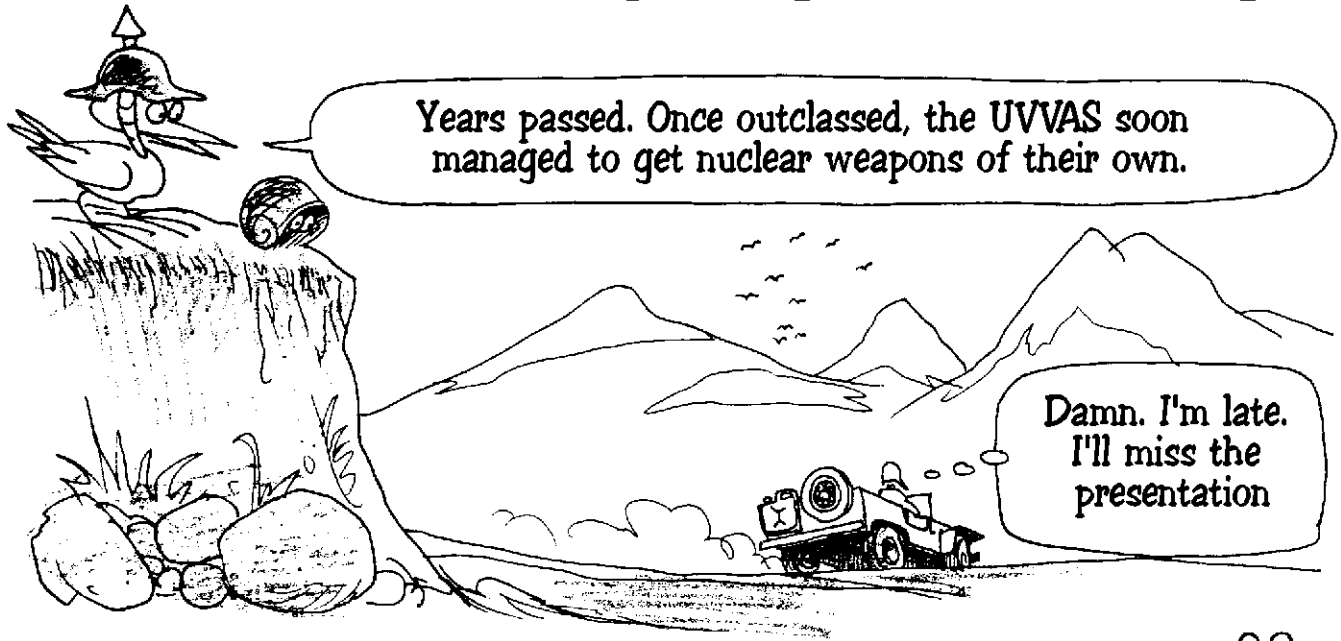
Elementary my dear colonel because for 99.3% of it Uranium 235 but stable Uranium 238!

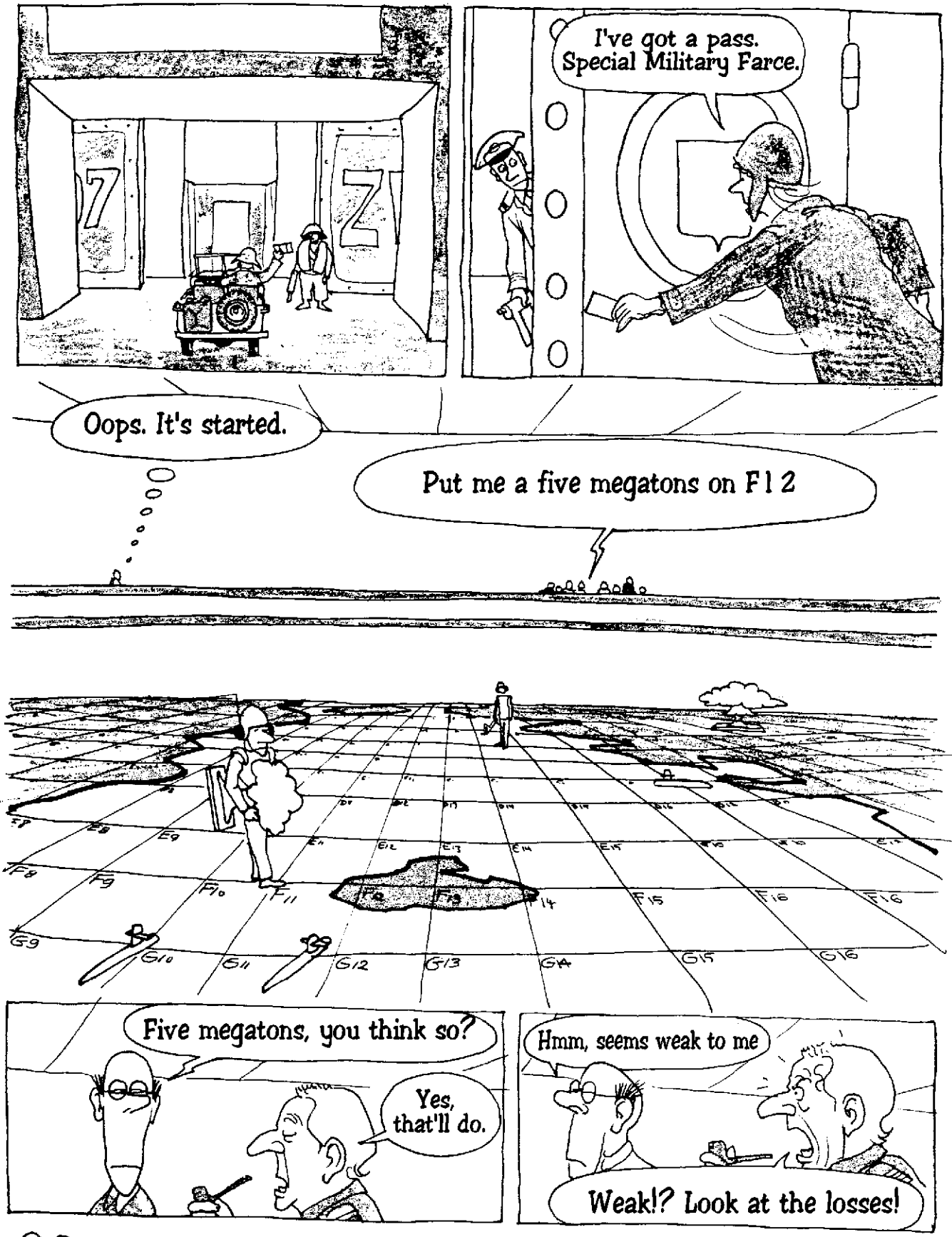
(*) If you want peace, prepare for war (Latin saying).


OK,so Where are we going to try our first ATOMIC BOMB ?
Here looks pretty good. A nice wide-open bay
Luckily we're at war at the moment
Perhaps we could warn the people living in the town. That would be more civilised don't you think?
Be serious Archie. If we warn the people they'll all go away and then how will we know the effects of radiation on living beings ?
Colonel, if you want to try your bomb I suggest you hurry up because the war looks like it will be over soon.
Goodness, you're right!
Hurry!
My babies...
I say. Do you think that if I blessed the bomb it would increase its effect?
I mean, it can't do any harm and at least it won't do any good...



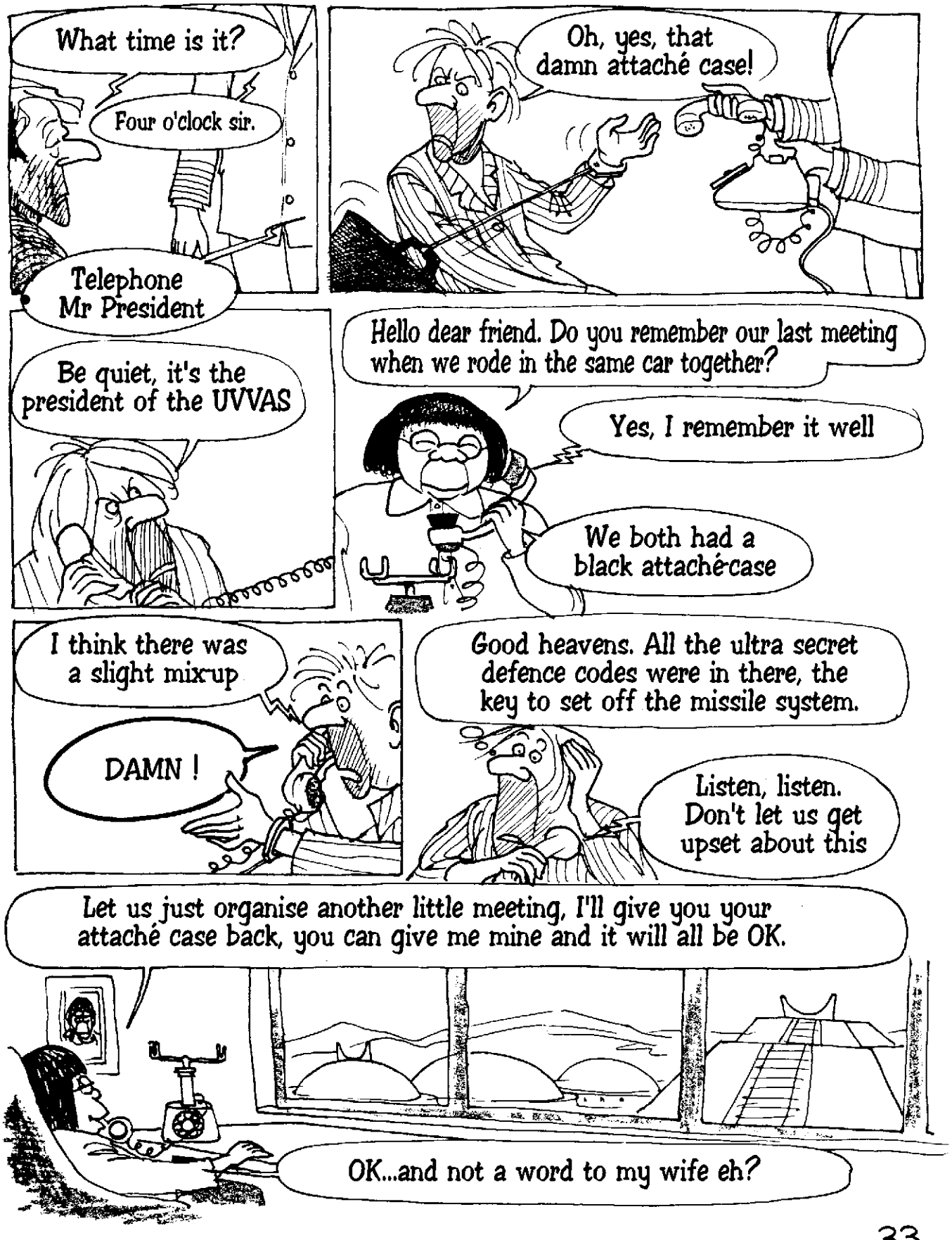
THE BALANCE OF TERROR



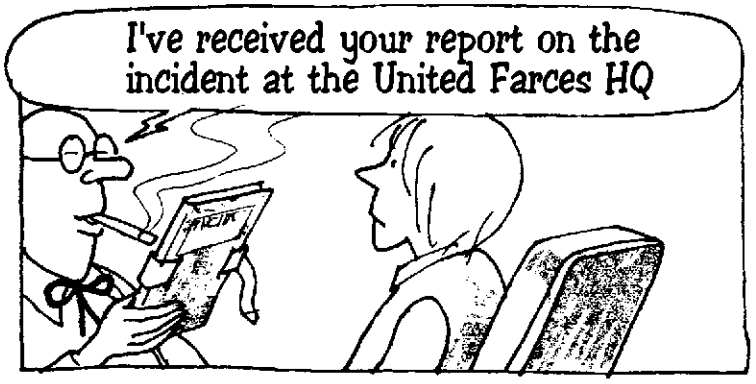

I've got a pass. Special Military Farce.
Oops. It's started.
Put me a five megatons on F12
Five megatons, you think so?
Yes, that'll do.
Hmm, seems weak to me
Weak!? Look at the losses!

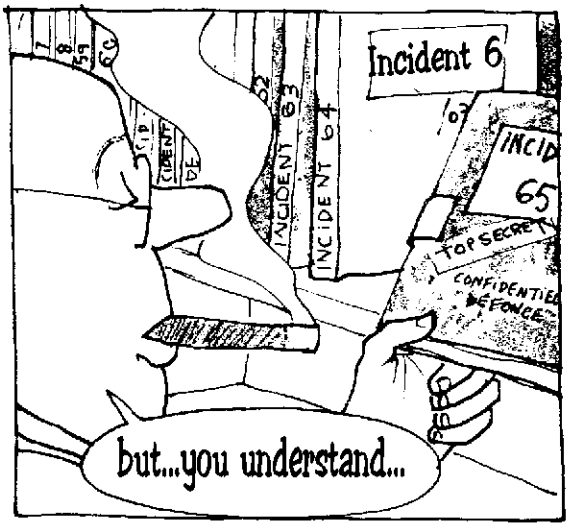

THEM
US
251
108
millions dead
Destruction (billions of credits)
THEM
US
75000
4602
No I'm certain on this, 5 megatons on F12 will give an additional 7 million dead because of wind direction.
I say we need at least a 12 megatons.
Right, now a multihead missile on H7
Pah! Civilians...
On H7? Clever.
What, is it war already?
No, just a simulation.
All the submarines up around the North Pole were a good idea.
Hostile in T4!
Another simulation?
Huh !?!
No, next door is the real OPERATION ROOM
But it's the same room
Of course
Now it's in S3
The real planetary situation

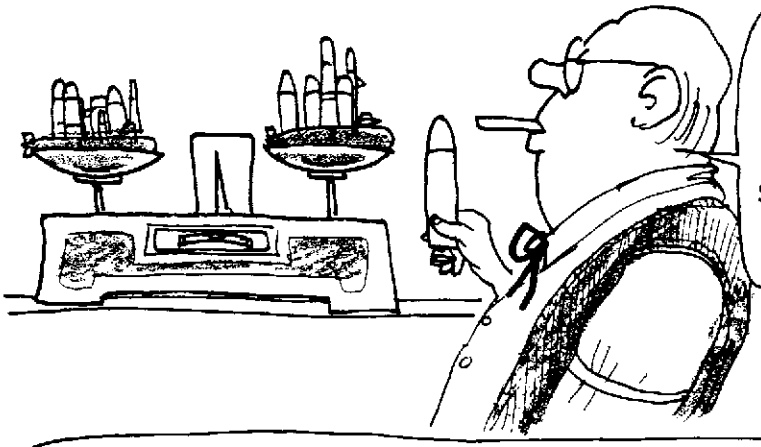

It's a missile
It's less than minus eleven from our defence system
Get ready
It's in R2, just passing the first defence lines
My friend, if you want my opinion we're in for an excellent war.
If you want to gain the advantage you have to anticipate. If I were you...
Get the president here
NO!
But you're NOT me.
Who's the idiot who left that lying around?
General, we were just making some modifications to the system.
Pah! Civilians...
OK. I've plugged everything back in as it was before
Ah! The hostile has disappeared off my scope.
Cancel the hostile.
Did anyone check the fuses?
brmm brmm
Sorry Mr President, it was a fuse.
A fuse...
Yes, silly huh?

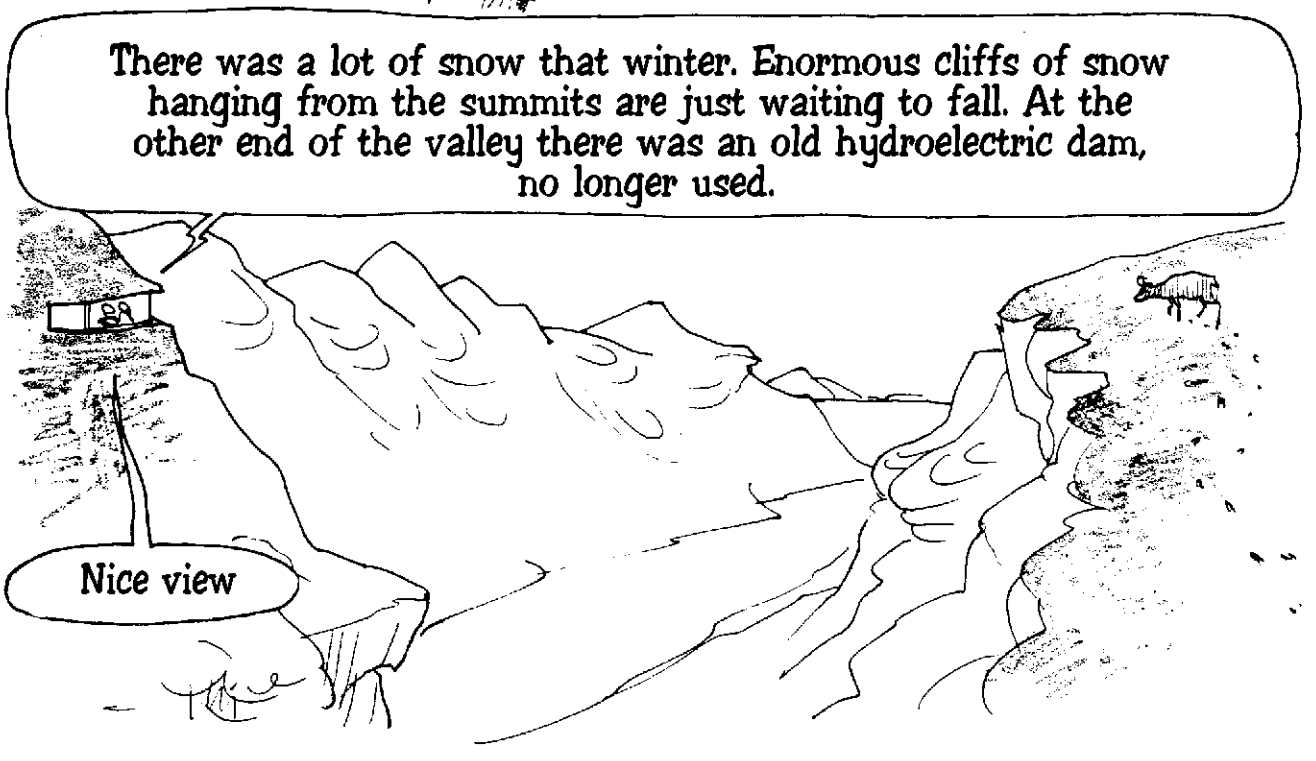

What time is it?
Four o'clock sir.
Telephone Mr President
Oh, yes, that damn attaché case!
Be quiet, it's the president of the UVVAS
Hello dear friend. Do you remember our last meeting when we rode in the same car together?
Yes, I remember it well
We both had a black attaché case
I think there was a slight mix-up
DAMN !
Good heavens. All the ultra secret defence codes were in there, the key to set off the missile system.
Listen, listen. Don't let us get upset about this
Let us just organise another little meeting, I'll give you your attaché case back, you can give me mine and it will all be OK.
OK...and not a word to my wife eh?

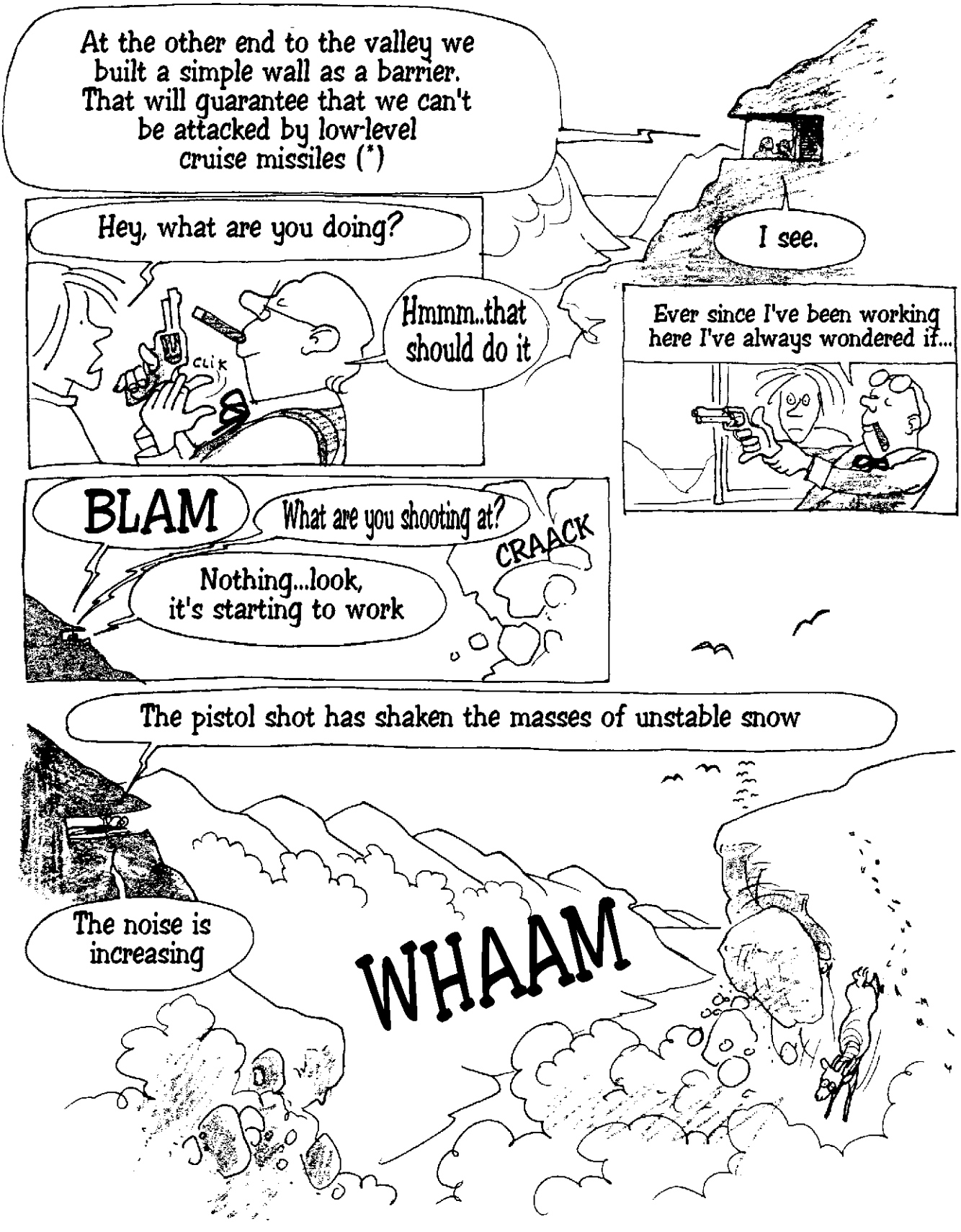
THE LASER


I've received your report on the incident at the United Farces HQ

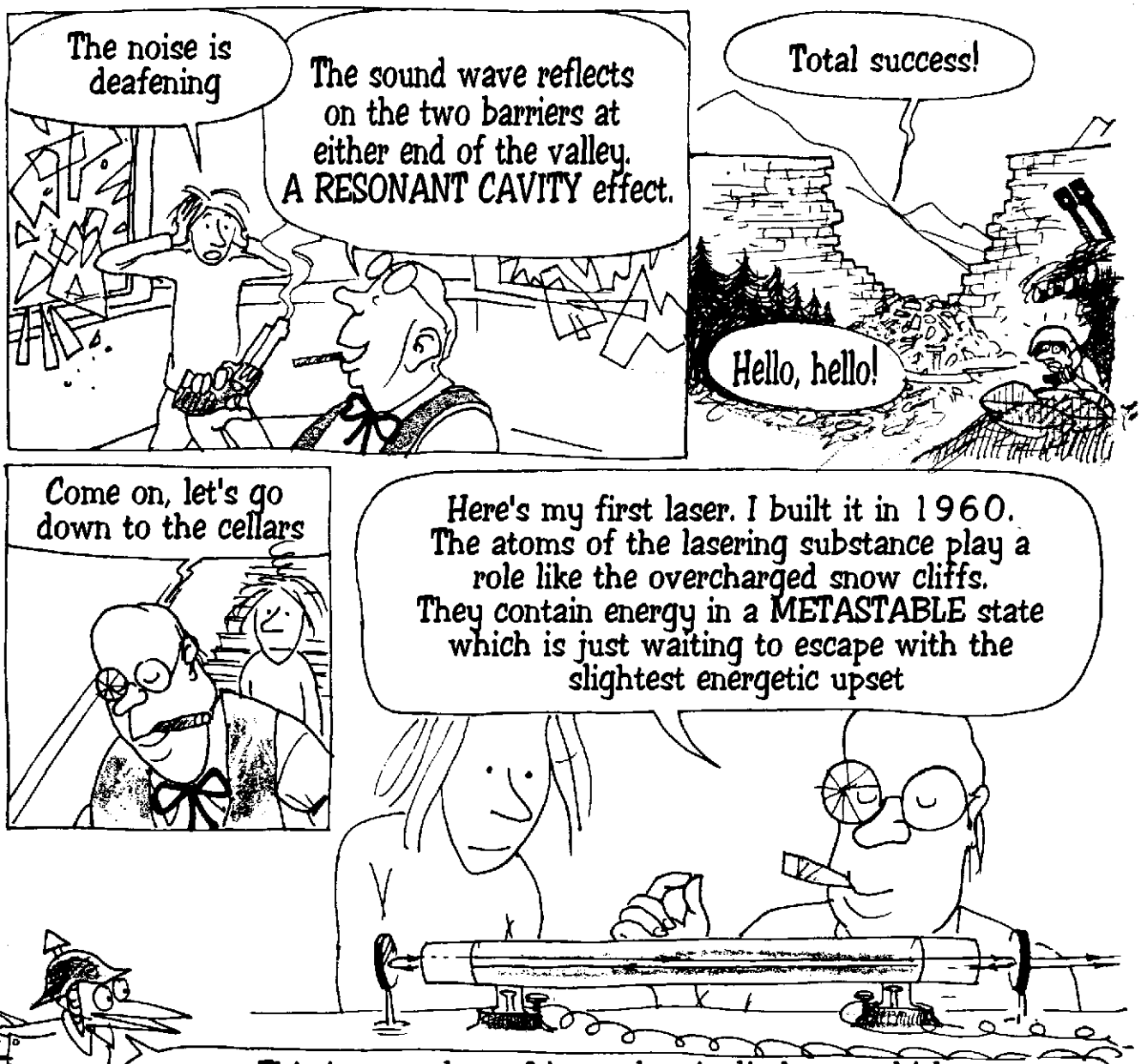

Incident 6
INCIDENT 63
INCIDENT 64
65
TOP SECRET
but...you understand...

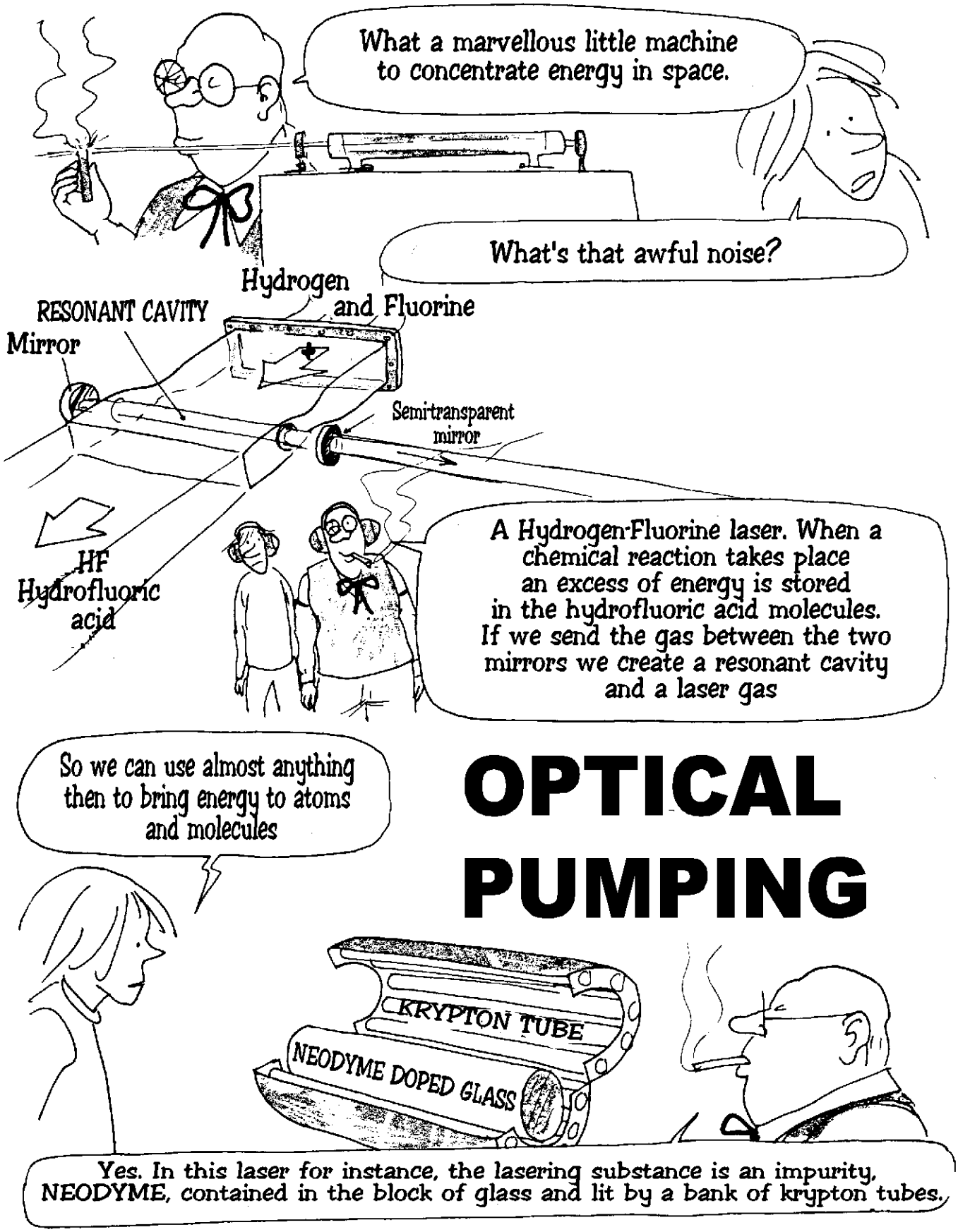

The Uvvas are building new missile silos, we are doing the same. They are increasing their missile firing submarine fleet. So are we. Nothing very decisive in there...

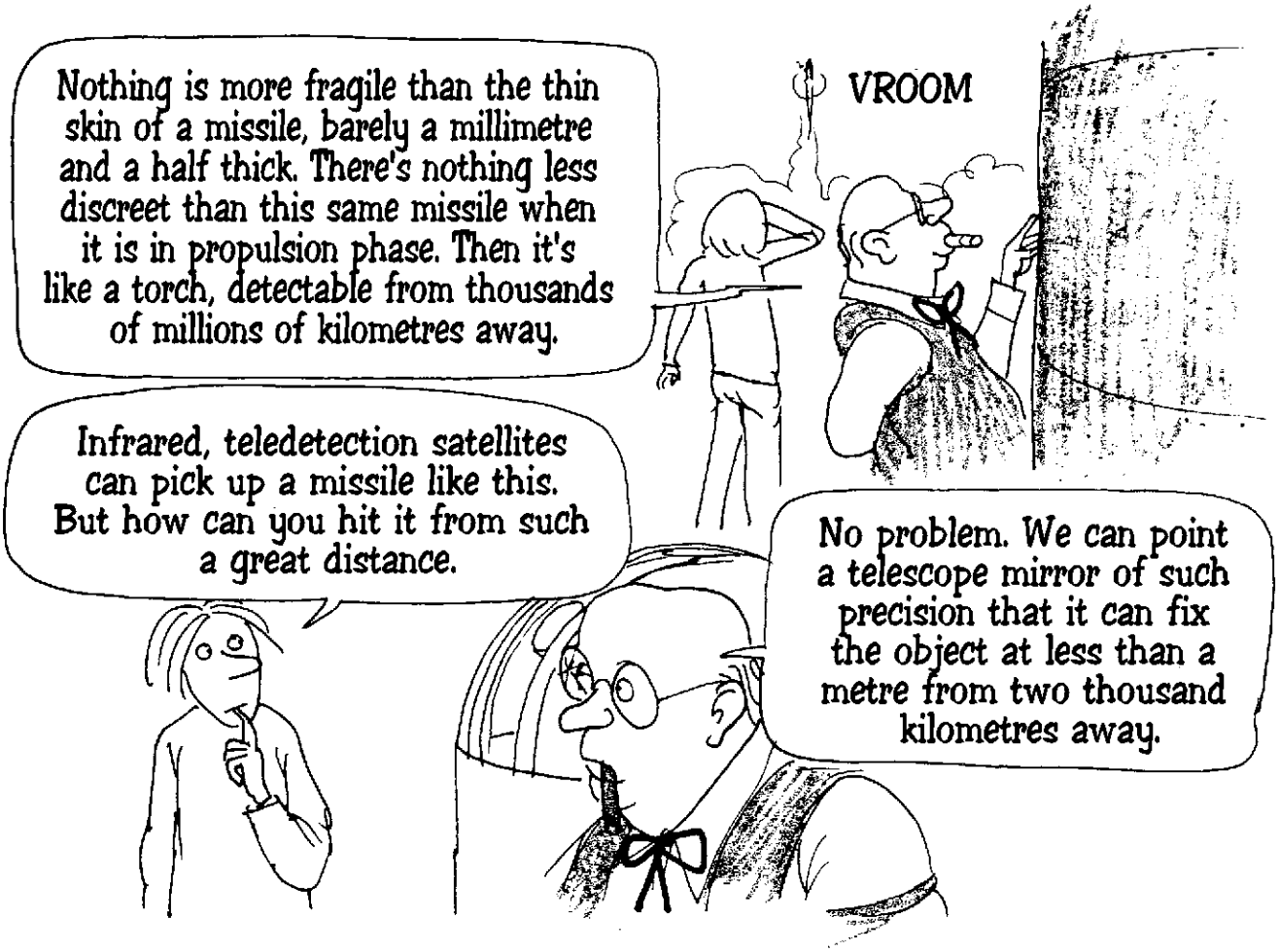

There was a lot of snow that winter. Enormous cliffs of snow hanging from the summits are just waiting to fall. At the other end of the valley there was an old hydroelectric dam, no longer used.
Nice view



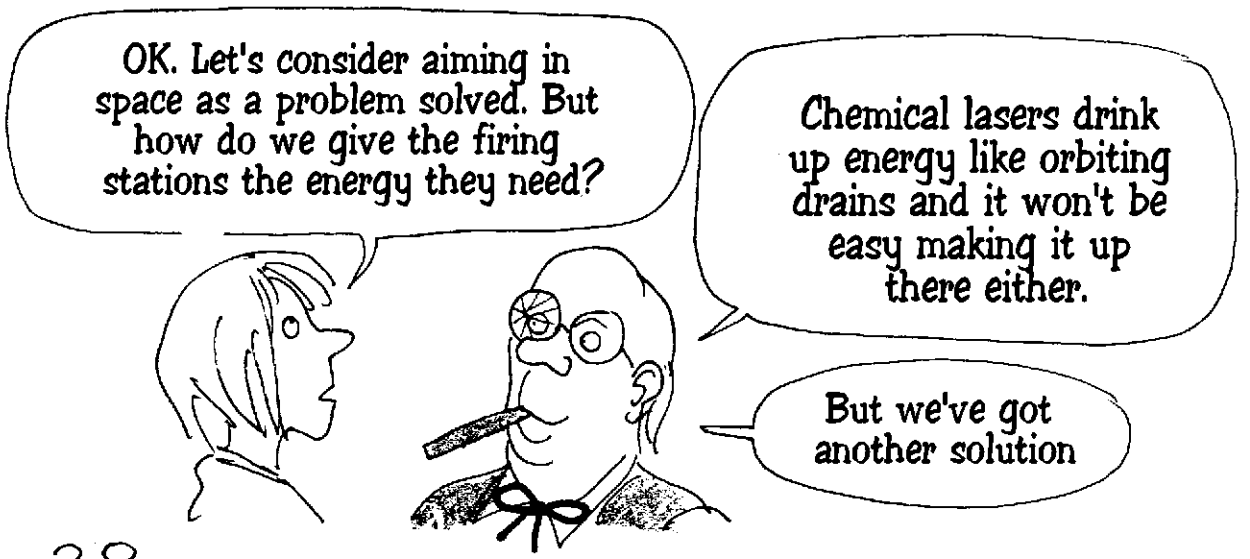
* Pilotless planes flying at 900 km/h carrying an atomic bomb. Undetectable by radar, they approach their target flying at just a few metres above ground.


The noise is deafening
The sound wave reflects on the two barriers at either end of the valley. A RESONANT CAVITY effect.
Total success!
Hello, hello!
Come on, let's go down to the cellars
Here's my first laser. I built it in 1960. The atoms of the lasering substance play a role like the overcharged snow cliffs. They contain energy in a METASTABLE state which is just waiting to escape with the slightest energetic upset
This is a gas laser. It's an electric discharge which PUMPS energy into its atoms (of ARGON) where they are stored. Here the sound wave of the valley is replaced by a light wave which goes backwards and forwards between two mirrors, perfectly parallel, which are equivalent to the walls at either end of the valley. One of the mirrors reflects 100% of the light, the other only partly reflects, thus allowing part of the energy to escape through it.


What a marvellous little machine to concentrate energy in space.
What's that awful noise?
Hydrogen and Fluorine
RESONANT CAVITY
Mirror
Semitransparent mirror
HF
Hydrofluoric acid
A Hydrogen-Fluorine laser. When a chemical reaction takes place an excess of energy is stored in the hydrofluoric acid molecules. If we send the gas between the two mirrors we create a resonant cavity and a laser gas
So we can use almost anything then to bring energy to atoms and molecules
OPTICAL PUMPING
KRYPTON TUBE
NEODYME DOPED GLASS
Yes. In this laser for instance, the lasering substance is an impurity, NEODYME, contained in the block of glass and lit by a bank of krypton tubes.


Nothing is more fragile than the thin skin of a missile, barely a millimetre and a half thick. There's nothing less discreet than this same missile when it is in propulsion phase. Then it's like a torch, detectable from thousands of millions of kilometres away.
VROOM
Infrared, teledetection satellites can pick up a missile like this. But how can you hit it from such a great distance.
No problem. We can point a telescope mirror of such precision that it can fix the object at less than a metre from two thousand kilometres away.

STAR WARS


OK. Let's consider aiming in space as a problem solved. But how do we give the firing stations the energy they need?
Chemical lasers drink up energy like orbiting drains and it won't be easy making it up there either.
But we've got another solution

We can build a laser with a substance like copper by pumping X-ray energy.

Yes but how do you create X-rays in orbit?

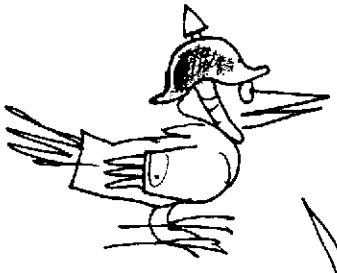
Simple! With this...

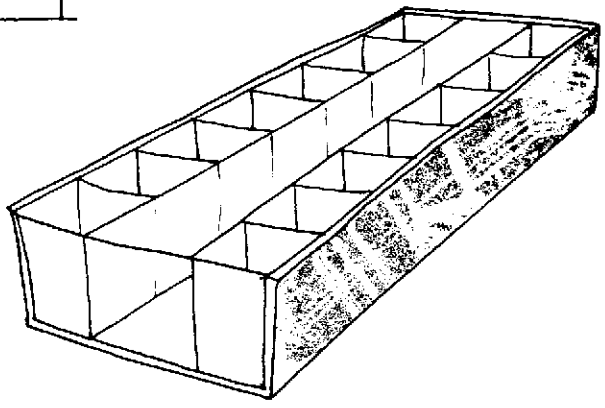
An atomic bomb produces a good part of its energy in the form of X-rays.

With such a supply of energy we don't need to, we can work with SUPERRADIANCE

What's that?

OK, but what will you makes the mirrors needed to create a RESONANT CAVITY from?



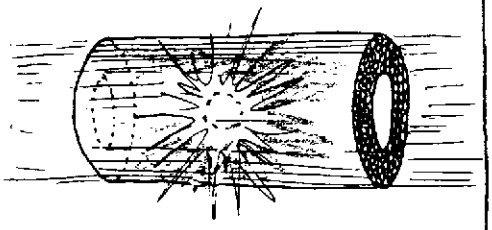


Imagine a system of pockets like this, made of fairly fragile paper, each one representing an atom

Send in the X-RAYS

The atom-pockets are full of energy

When the first pocket gives way, it causes all the others to empty.



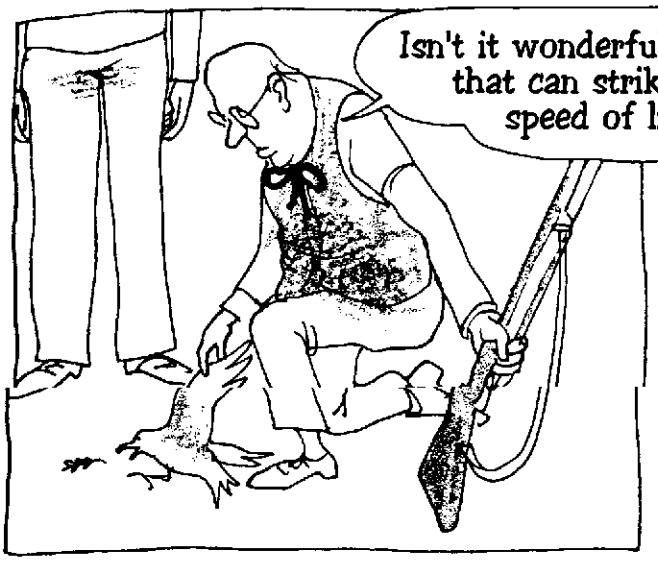
A low-powered A-bomb could thus irradiate a beam made of thousands of fine needles of copper

But at millions of kilometres you couldn't have any error in the aim.

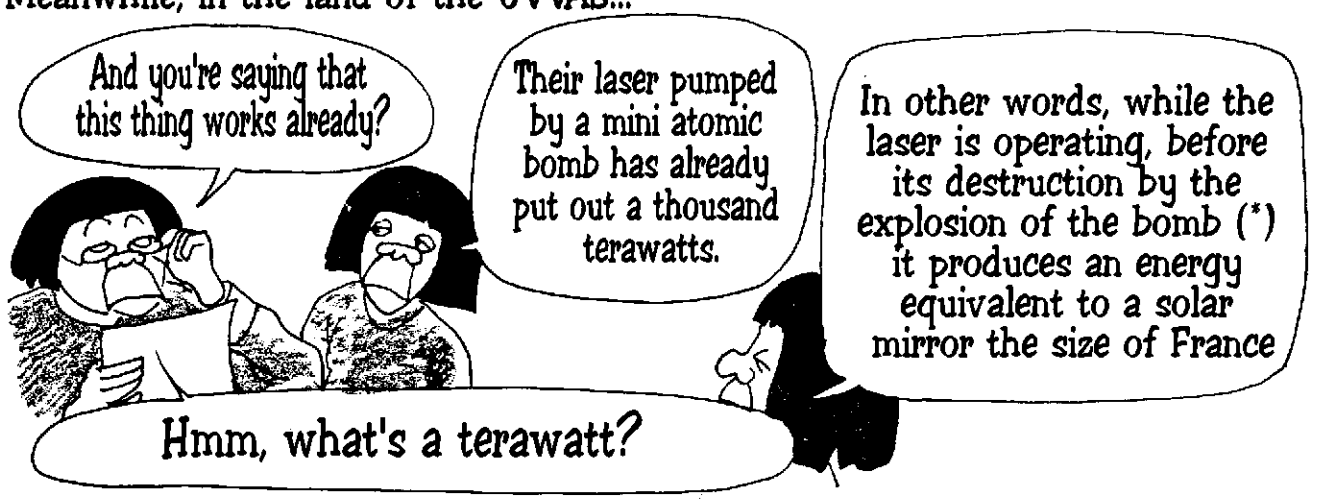
My friend, you have to if you want to hit the quarry

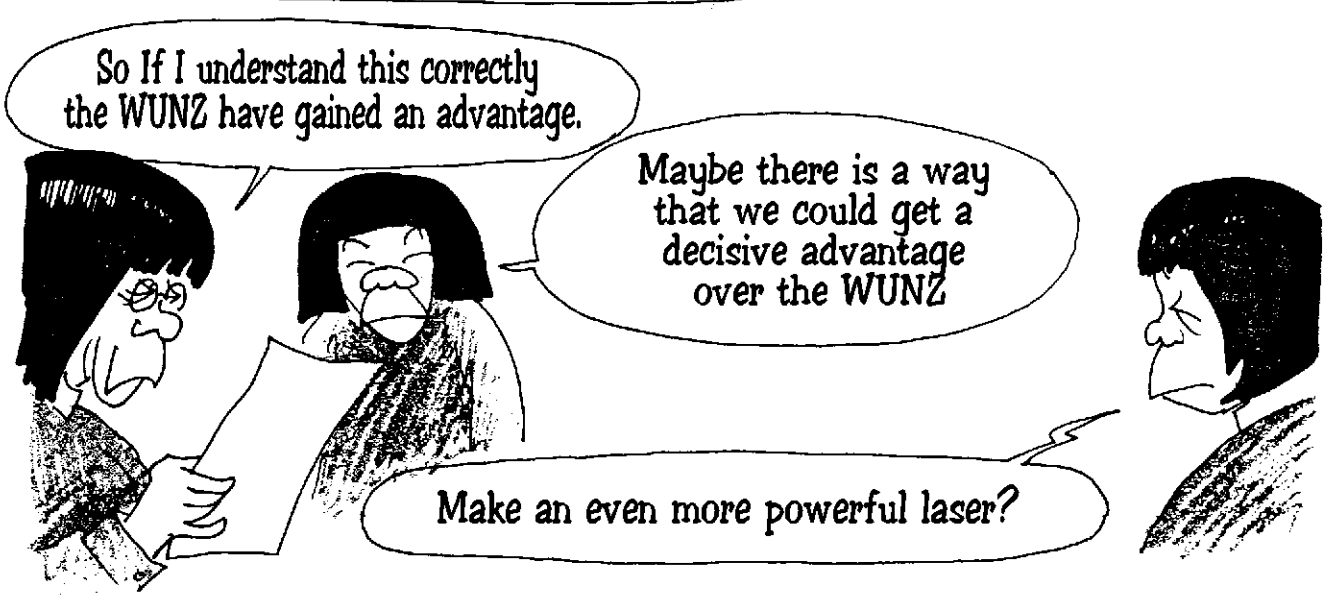
By dispersing the balls of shot you get a maximum number of chances of hitting the target.

THE ANTI-MATTER WEAPON



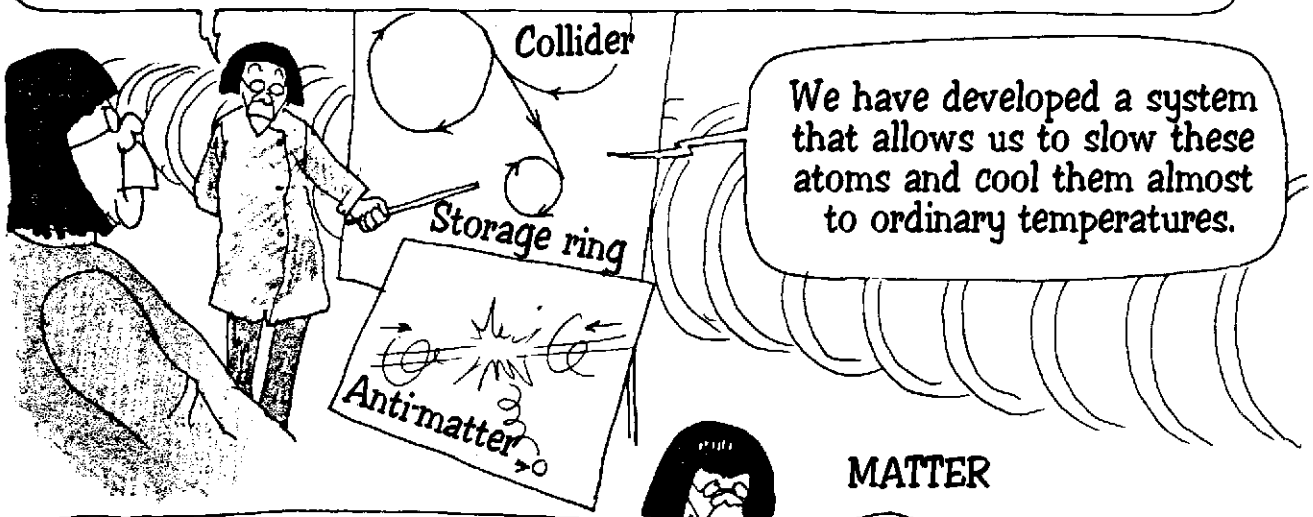
Meanwhile, in the land of the UVVAS...



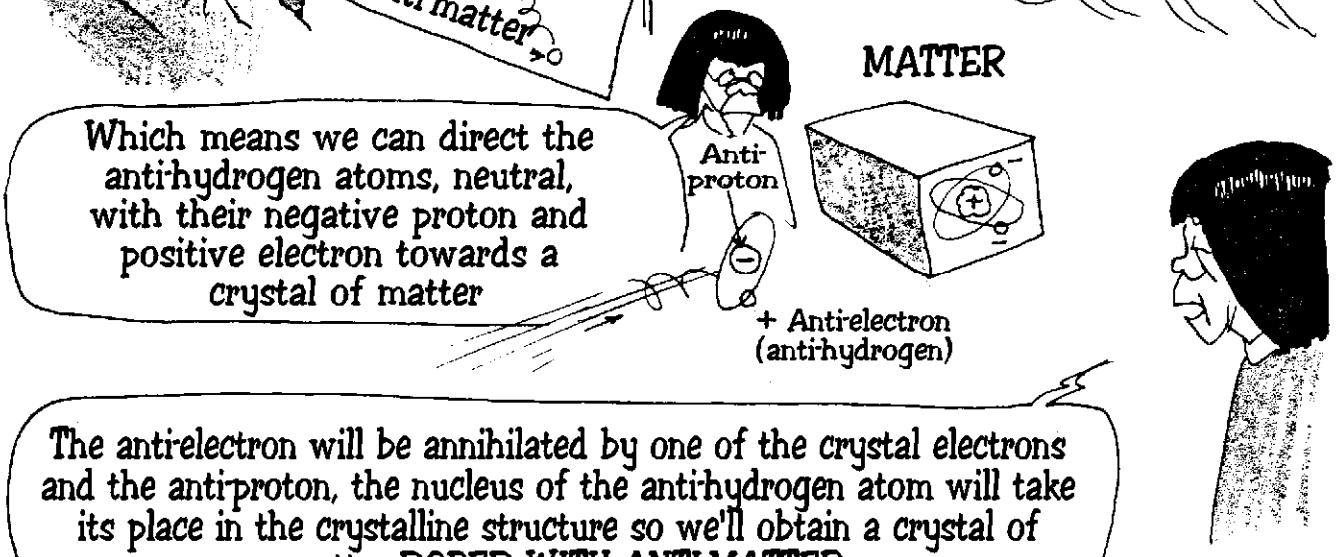


(*) During a tenth of a millionth of a second.

We already know how to produce atoms of anti-matter by causing the frontal collision of two particles in an accelerator, and we also know how to store anti-matter atoms for weeks within a magnetic barrier called a storage ring.



We have developed a system that allows us to slow these atoms and cool them almost to ordinary temperatures.



Which means we can direct the anti-hydrogen atoms, neutral, with their negative proton and positive electron towards a crystal of matter

The anti-electron will be annihilated by one of the crystal electrons and the anti-proton, the nucleus of the anti-hydrogen atom will take its place in the crystalline structure so we'll obtain a crystal of matter DOPED WITH ANTI-MATTER

If we modify a particle accelerator so that it just produces anti-matter then we could easily make this doped crystal

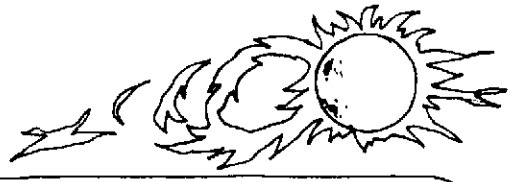
Yes but you'd be producing tiny quantities of anti-matter, a milligram !

Do you know what a milligram of anti-matter represents?


Twenty megatons of TNT!
!!!
And how would you set off such a bomb?
There are lots of ways. For instance we would just dissolve the composite crystal...in water!
Heh !?
Excuse me, I'm a little nervous...
so when could we be ready to construct these bombs ?
Why "these" ? One would be enough !
200 grams of antimatter is equivalent to the charges of all the missiles that currently exist in silos and submarines, in other words about ten thousand megatons worth of TNT.
With that we could wipe out the WUNZ with just one missile.

THE EMP WEAPON (*)

Excellent, but how do we deliver such a dangerous thing on target without risk?



Well as you know, when the sun is erupting it bombards the upper atmosphere with all sorts of particles and which ionise the upper layers. This causes electromagnetic storms that cause important perturbations in radioelectric communications

We believe that we could create pulses of five hundred volts per centimetre on the ground by exploding a bomb of ten megatonnes at an altitude of five hundred kilometres. The radiation, which would strongly ionise the upper layers, would create a fabulous electromagnetic storm.

What's happening?

The radar screen has gone off...

Hello, hello. It's been cut off!?

Have you managed to contact the president?

We've lost all contact our missile launching submarines and I can't reach our bombers or our missile silos

Now let's see. Follow the red wire to the junction...

(*) Electro Magnetic Pulse

Which would allow us to use a small, banal satellite in low orbit and get it to plunge down to earth carrying the antimatter charge. It's just a question of synchronisation.

Yes, synchronisation of course

Not possible!

THE NUCLEAR WINTER

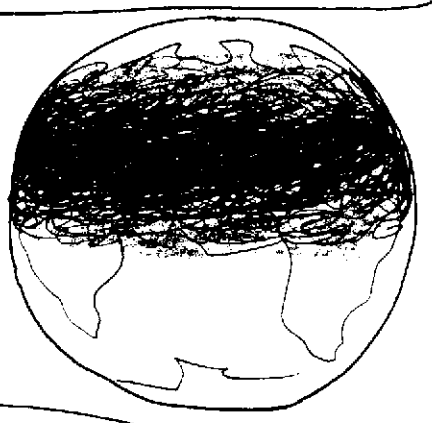
We can't drop the equivalent of ten thousand million tons of TNT on the earth just like that...(*)

KOF!

According to my calculations, it would be equivalent to the impact of a five hundred metre diameter meteorite

Whether it's a series of thermonuclear bombs or one antimatter missile, the result would be to send a billion tons of dense dust into the stratosphere...

...which could remain at an altitude of 20 Km for between 6 months to a year



One week after the explosion, on the latitude of the target, the light arriving at ground level would be reduced by a factor of 400

It would be a NUCLEAR NIGHT

(*) Equivalent to a block of TNT of one kilometre long on each side.

That would cause an average temperature drop of 25°C thoughout the northern hemisphere.

By Allah, this snow !!

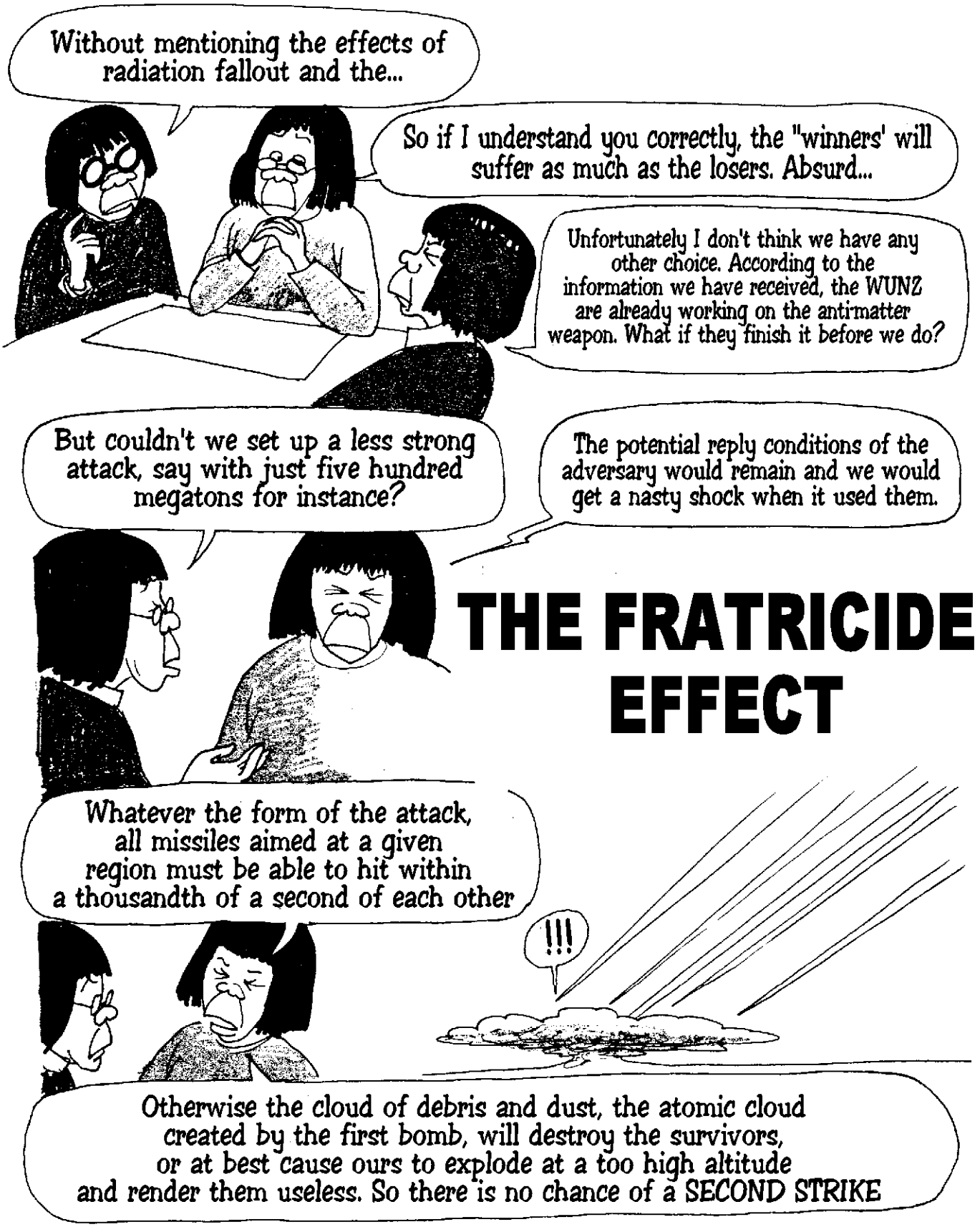
The absence of light would rapidly cause the death of all vegetation, and so our food resources.

The important temperature differences would create fantastic storms near the coast and the sky, full of dust and ash, would be in a constant and violent storm state.

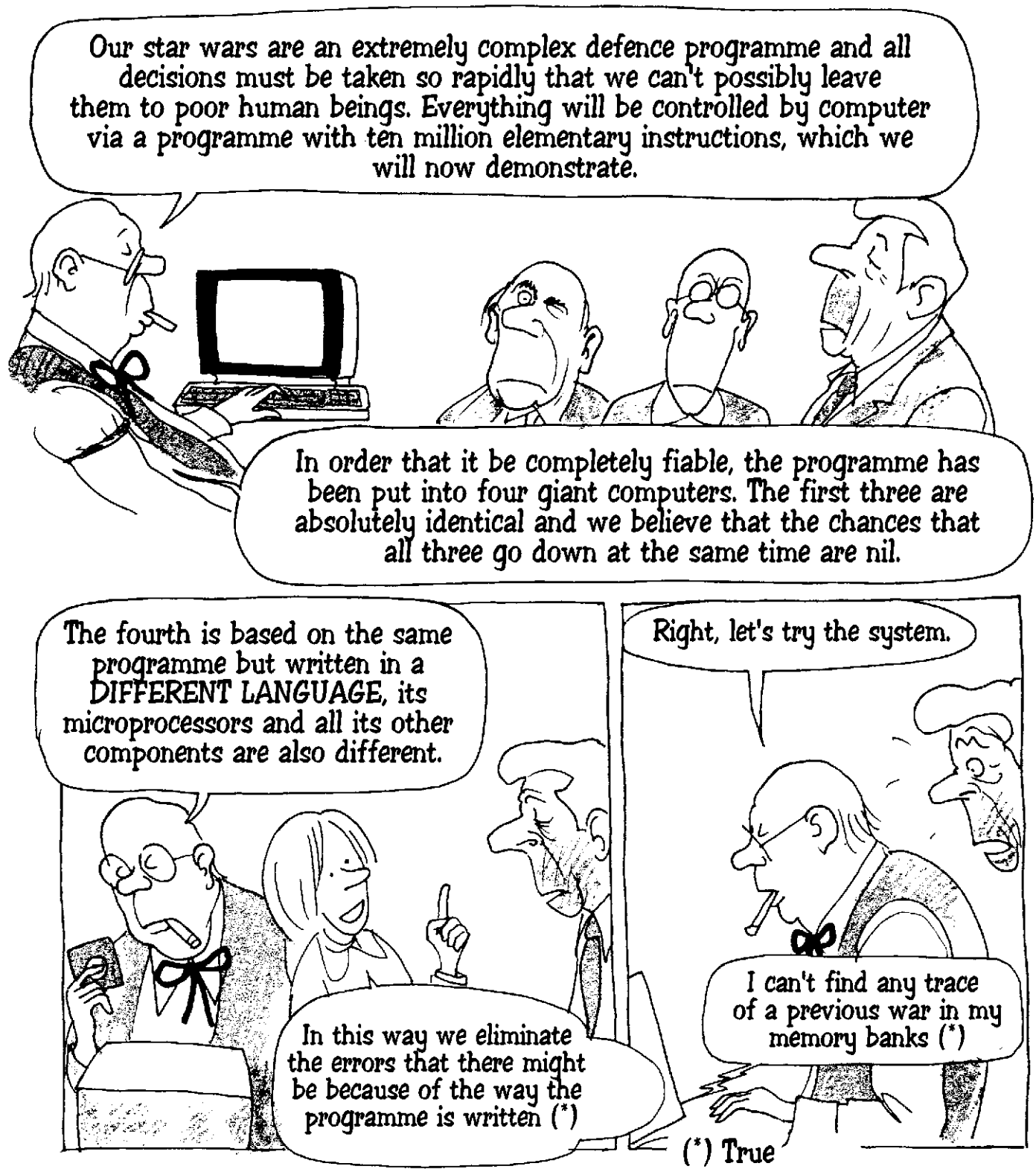
Solar energy will be absorbed by the dust in the stratosphere, which will re-emit this energy as infrared radiation. Half of it will be lost into the cosmos and the rest will heat up the adjacent atmospheric layers.

We'll end up in a singular atmospheric situation, with frozen soil and warm air at altitude, which will progressively pump up all the humidity on the ground. The atmosphere will become SUPERSTABLE and there won't be any more rain.

Carbonic gas will accumulate at ground level and air will no longer be sterilised by ultraviolet rays in the upper atmosphere, it will become full of germs.

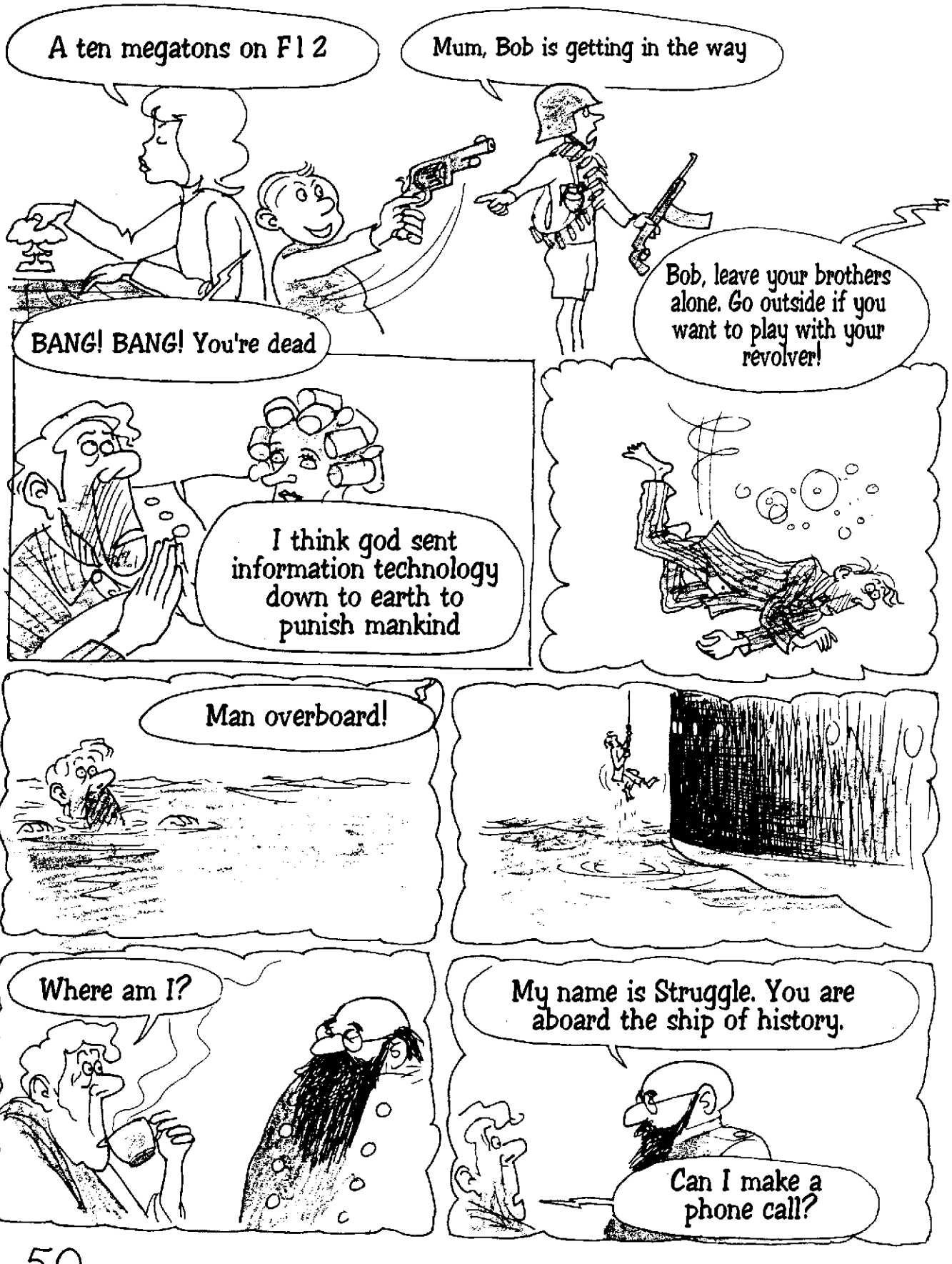

Without mentioning the effects of radiation fallout and the...
So if I understand you correctly, the "winners' will suffer as much as the losers. Absurd...
Unfortunately I don't think we have any other choice. According to the information we have received, the WUNZ are already working on the antimatter weapon. What if they finish it before we do?
But couldn't we set up a less strong attack, say with just five hundred megatons for instance?
The potential reply conditions of the adversary would remain and we would get a nasty shock when it used them.
THE FRATRICIDE EFFECT
Whatever the form of the attack, all missiles aimed at a given region must be able to hit within a thousandth of a second of each other
!!!
Otherwise the cloud of debris and dust, the atomic cloud created by the first bomb, will destroy the survivors, or at best cause ours to explode at a too high altitude and render them useless. So there is no chance of a SECOND STRIKE

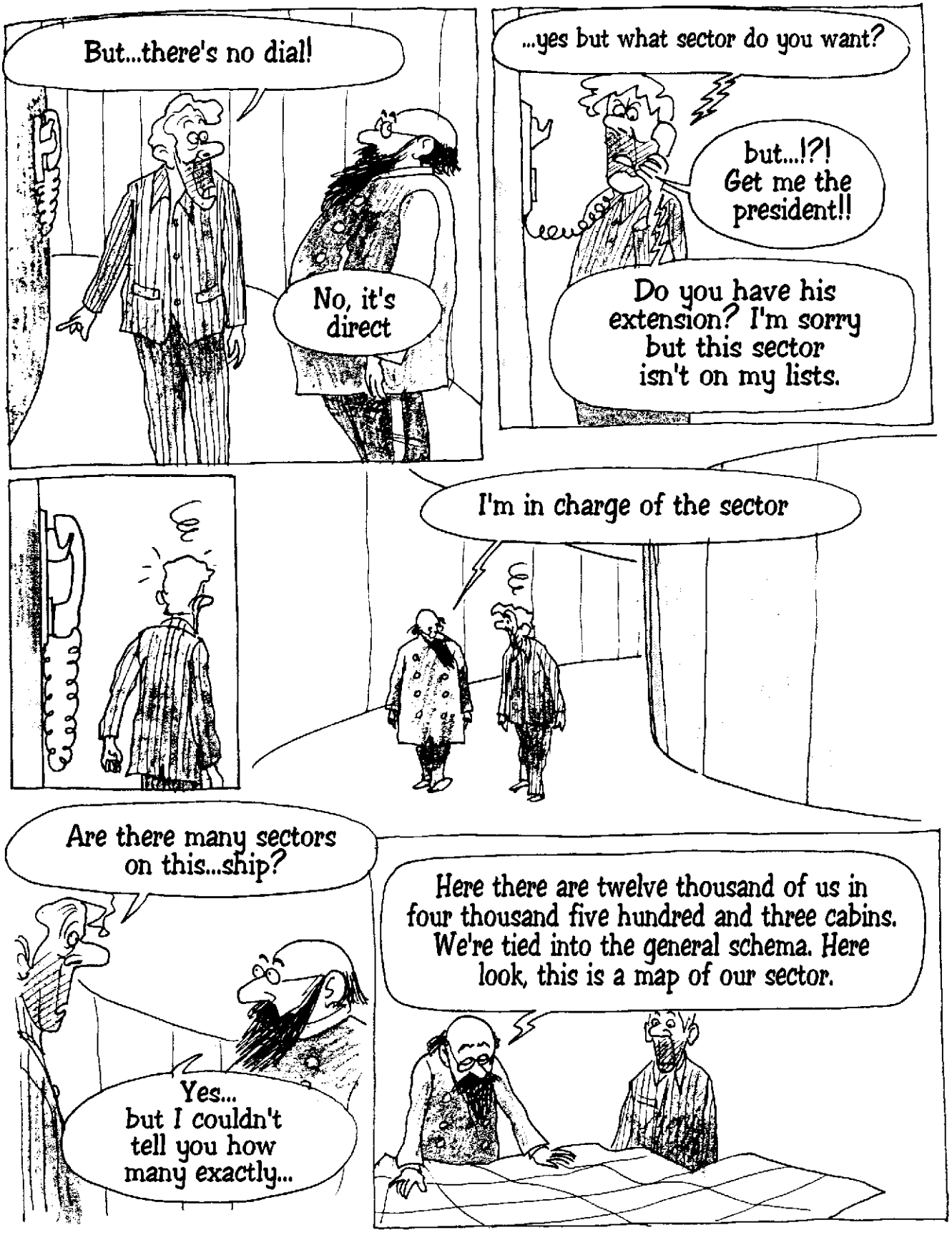
STRANGELOVE

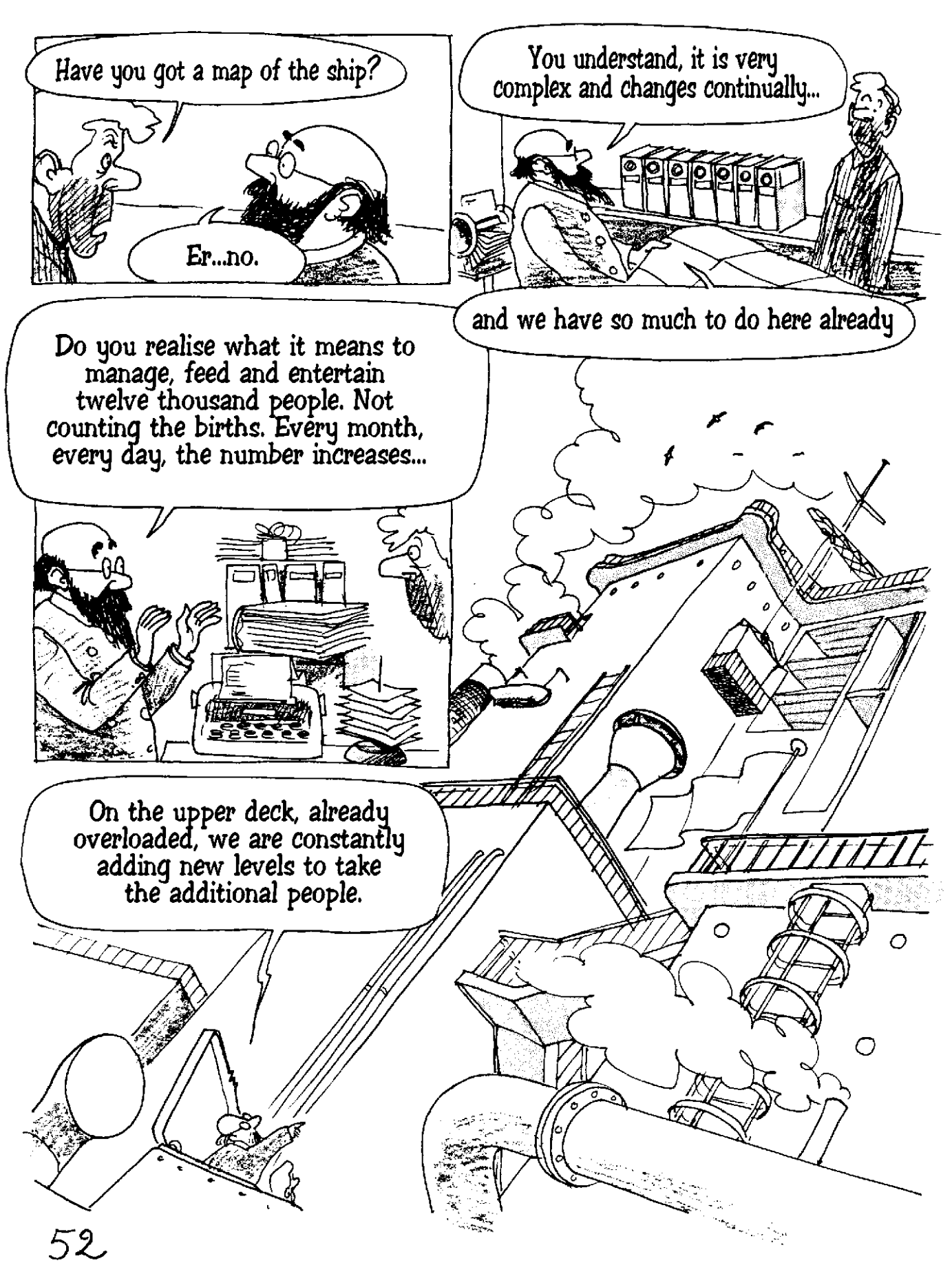


A few hours later...

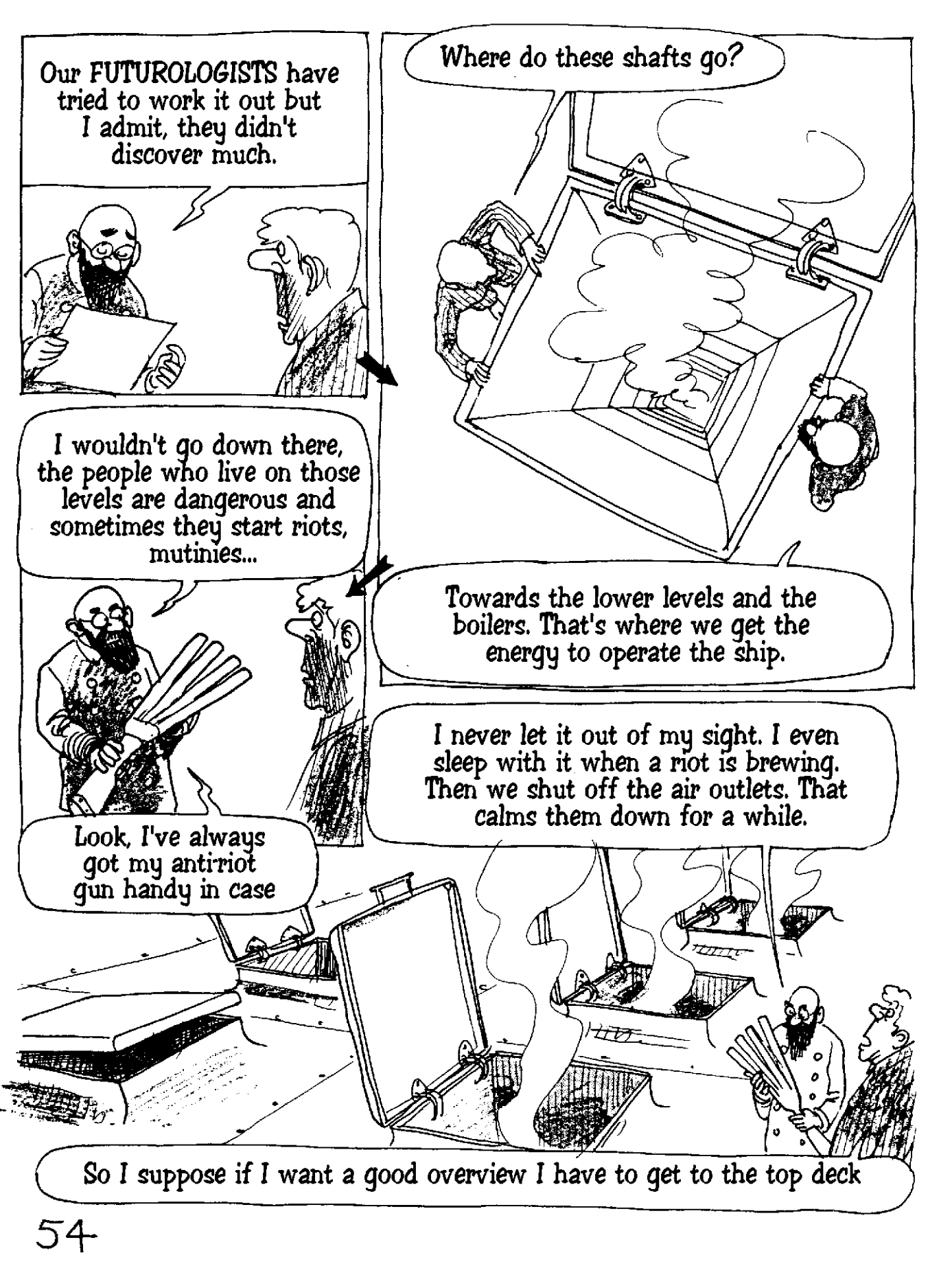
(*) This incident paralysed the launch of a space shuttle in 1985

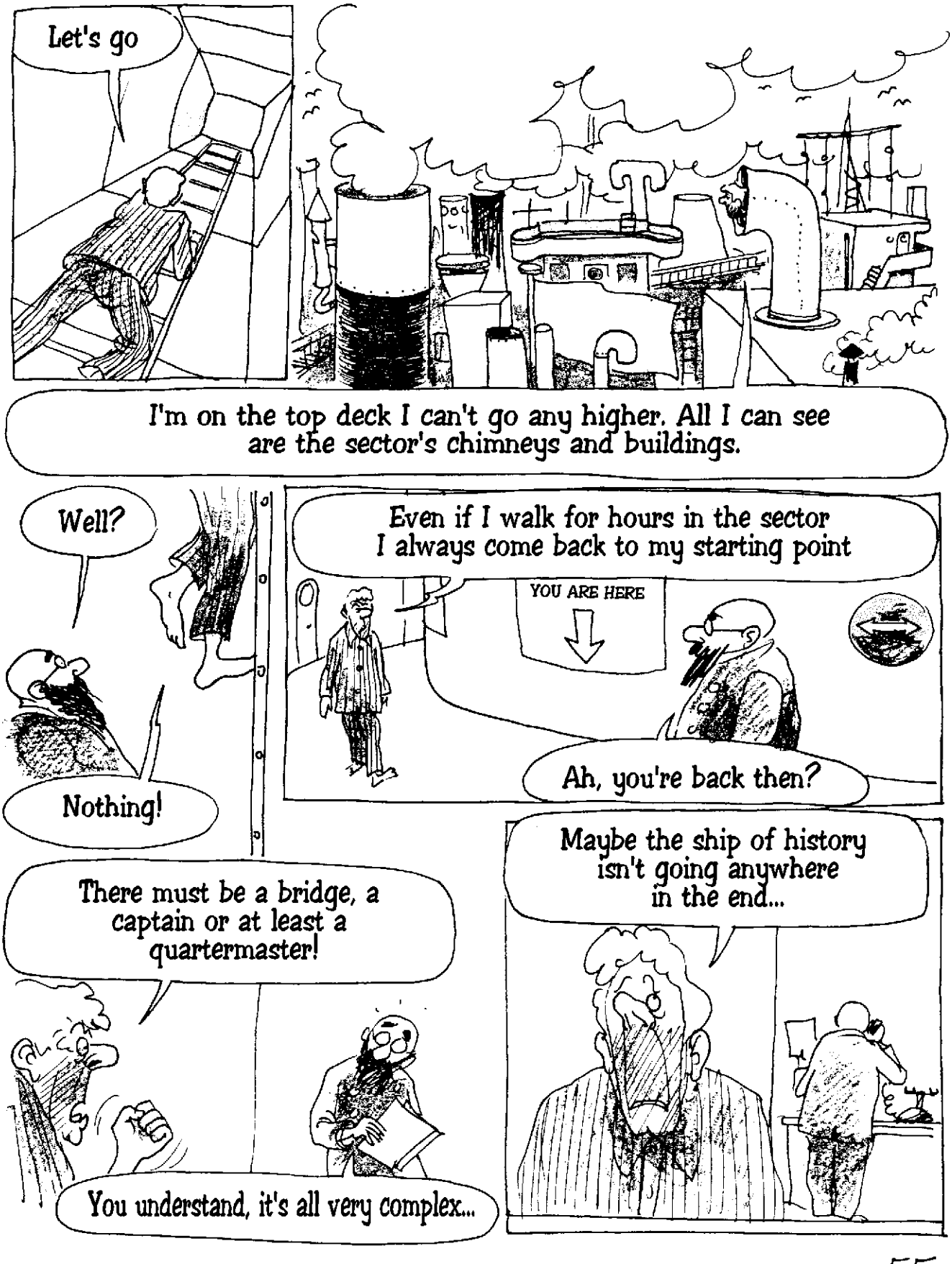

A ten megatons on F12
Mum, Bob is getting in the way
BANG! BANG! You're dead
Bob, leave your brothers alone. Go outside if you want to play with your revolver!
I think god sent information technology down to earth to punish mankind
Man overboard!
Where am I?
My name is Struggle. You are aboard the ship of history.
Can I make a phone call?


But...there's no dial!
No, it's direct
...yes but what sector do you want?
but...!?! Get me the president!!
Do you have his extension? I'm sorry but this sector isn't on my lists.
I'm in charge of the sector
Are there many sectors on this...ship?
Yes... but I couldn't tell you how many exactly...
Here there are twelve thousand of us in four thousand five hundred and three cabins. We're tied into the general schema. Here look, this is a map of our sector.


Have you got a map of the ship?
Er...no.
You understand, it is very complex and changes continually...
and we have so much to do here already
Do you realise what it means to manage, feed and entertain twelve thousand people. Not counting the births. Every month, every day, the number increases...
On the upper deck, already overloaded, we are constantly adding new levels to take the additional people.


Who is in command on this ship?
I'm not sure, we get our orders from above...
What route are you following? Do you have a map?
I think those in charge must have one.
I haven't even worked out which is the bow and which is the stern on this ship.
Here's a map of the sector... no wait...it's like that...
...unless the bow is over there...
...or maybe the opposite...
You understand, it's all very complex...
I don't have much as far as maps go...
no...that's the layout of the airconditioning system
We do have an inertia plant and in theory that should record the route we've followed, but...
What ROUTE are you following, what is your direction? What direction is the SHIP OF HISTORY taking?


Our FUTUROLOGISTS have tried to work it out but I admit, they didn't discover much.
Where do these shafts go?
Towards the lower levels and the boilers. That's where we get the energy to operate the ship.
I wouldn't go down there, the people who live on those levels are dangerous and sometimes they start riots, mutinies...
I never let it out of my sight. I even sleep with it when a riot is brewing. Then we shut off the air outlets. That calms them down for a while.
Look, I've always got my antiriot gun handy in case
So I suppose if I want a good overview I have to get to the top deck


Let's go
I'm on the top deck I can't go any higher. All I can see are the sector's chimneys and buildings.
Well?
Nothing!
Even if I walk for hours in the sector I always come back to my starting point
YOU ARE HERE
Ah, you're back then?
There must be a bridge, a captain or at least a quartermaster!
You understand, it's all very complex...
Maybe the ship of history isn't going anywhere in the end...


Excuse me, duty calls...
Maybe it doesn't even have a rudder
What's happening?
We're starting to list
We're capsizing if you ask me
It isn't surprising with the tons of superstructure you've added over the years!
BRRRRR BRRRRR
The phone, the phone, they're calling me from above at last
Darling, what's the matter? You're wanted on the phone, it's the president of the UVVAS
WAAAAH
Hello my friend. I've been thinking... what if we disarmed a bit?
Do you know I think that might be good idea...
END

Note for translators of 'Joyeuse apocalypse/Have a nice apocalypse'.

If you are translating from English please note that the names of the tribes, the 'Wunz' and 'Uvvas', is my attempt to get across JPP's original choice of names where they are called the 'Zuns' and the 'Zautres', or in proper French, 'les uns' (one lot) and 'les autres' (the other lot) with the 's' elided to give the 'Z'.

Equally, he almost always changes the word 'défense' (defence) into 'défonce'. Which can mean a drugged, incontrollable state or the act of breaking something down vigorously (Fr. verb 'défoncer')

I found this play on words hard to translate. Sometimes I've been able to use 'farce' (joke) instead of 'force' and substitute it for 'défonce/defence' z,d 'barmy' for 'army' but not often. If your language lends itself to a better play on words for this, then don't hesitate, for as I say, in almost every example in the original French it is 'défonce' that is used and not 'défence'. That is the idea that JPP wishes to get across I think, that they're all crazy ;-)

Here and there I've also use 'barmy' for 'army'