



Sub Rosa

A Trialogue

After dinner one evening in 1965, Stan in a playful mood dictated to Françoise all in one breath, so to speak—without corrections or rewrites—the following “top secret” skit, which was not meant for public consumption. When asked what was to be done with it, he replied, “File it away and posterity will decide.” It was filed and forgotten and no one else ever knew of its existence until it resurfaced recently. Now “posterity,” in the form of the editors of this magazine, has decided to print it as a perfect example of Ulamian humor, which, built on a great sense of ridicule and classical erudition, was concise, incisive, and capturing of the essence.

Sub Rosa, which Stan called a play—as if he had meant to dictate a five-act opus!—was his way of making fun of the horrendous nuclear debates that had filled the councils of state, civilian and military, and the nation’s press and airwaves since the advent of the atomic age. More specifically, the skit repre-

sents a few of the scientists and some of the political and scientific issues that surfaced after the frantic bomb tests of 1961 and 1962 and the Test Ban Treaty of 1963, which limited testing to underground.

It would not take a great reach of imagination to transpose this into the present. Twenty years later the arguments and even some of the people are still the same!

The footnotes are Stan’s own and self-explanatory, but to heighten a younger and less familiar generation’s appreciation of the satire, the following remarks and the numbered endnotes will we hope prove helpful.

Sub rosa (literally under the rose) refers to an alleged ancient French custom of hanging a rose over a council table to swear those present to secrecy.

The principal characters engaged in a three-sided conversation are Bethe, Teller, and Ulam, thinly camouflaged as Benefacius, Totilus, and Ulfilas. Benefacius is a play on the name Bonifacius, a German saint;

Totilus was a belligerent king of the Ostrogoths; and Ulfilas was a bishop of the Goths. (Note the reference to chess, a favorite game of Ulam’s.)

Rounding the cast, we have Gregarius, the geophysicist David Griggs, a great admirer of Teller and for a while chief scientist for the Air Force; Fos-terasis, John Foster, then director of Livermore, known as an outspoken hawk; and Vertihumerus (Stan’s Latin for green horn), an anonymous young man. The scientist with a lapsed Q clearance is the Russian-born physicist George Gamow, whose speech was characteristically laced with misplaced articles.

There also appear allusions to Hermanus Canaan, read Herman Kahn of the Rand Corporation, a well-known California think-tank; Libius, Willard Libby, an AEC Commissioner; and Manilius, John Manley, secretary of the General Advisory Committee to the AEC in its early years.

Enjoy!

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The trialogue takes place in Limbo, which explains the use of Latin and other classical references.

Dramatis Personae

BENEFACIUS, a physicist

TOTILUS, a weapon scientist

ULFILAS, a chess player

GREGARIUS, a former Air Force scientist

FOS-TERASIS

VERTIHUMERUS, a young scientist

A SCIENTIST WITH A LAPSED Q CLEARANCE

CHORUS OF SPACE SCIENTISTS

AN ECHO OF DOD CHORUS

A CHORUS OF FEGATELLO SCIENTISTS

A CHORUS OF SHERWOOD^[2] SCIENTISTS

AN INVERTED JACOB'S LADDER

BENEFACIUS: I have just read an interesting article in *Life*, but I think it contains some technical mistakes. For example, the data on—

TOTILUS: Many wonderful things can come from testing. Think of obtaining oil from shale, for instance.

BENEFACIUS: One mistake I noticed—

TOTILUS: Excuse me, may I say that the pressure obtained at the site of an underground explosion can produce new minerals, perhaps even diamonds. Harbors could be built in Alaska, in Greece. There is oil to be squeezed out in Texas.

BENEFACIUS: It is not correct to say—

TOTILUS: Very small, economical—I mean cheap-bombs can be tested for tactical use in small wars.

ULFILAS (*standing up, having kept quiet with some difficulty*): This article describes in dramatic tones the horribly difficult decision the President has to make—as usual in solitude—after weighing the pros and cons of testing. This comes at the end. If one reads the beginning and the middle, there seems, however, no question as to what the decision has to be. The author makes it clear what anybody in his right mind would decide. He describes the tragedy of the moratorium. Since the Russians made so much progress in testing after the end of the moratorium, it would have been much better if they and we had tested all the time.

Isn't it possible that the Russians, with their devilish cleverness, might really want us to concentrate on little improvements of warheads instead of working on the really militarily important developments, like rocketry?

CHORUS OF SPACE SCIENTISTS:
The gap exists, but it is narrow.

If we miss the moon, we go around the sun.
How can we lose!

ECHO FROM DOD CHORUS:
The credible second-strike capability is firming up.
The stable deterrent might be upgraded.

ULFILAS: Unfortunately both sides have an incredible first-strike capability.

CHORUS OF FEGATELLO SCIENTISTS:
Not all is lost,
because we've got—
or have we got?—

^[1]With apologies to the spirit of Anatole France, who wanted to write a story so named. Any lack of resemblance to real persons is purely coincidental.
^[2]Greek for strange light.
Italian for little liver[]l

a neutron bomb,
and they have not.

ULFILAS (to himself): Produce neutrons or get off the pad!

TOTILUS: Peaceful applications are very important. We might be accused of blood-thirstiness otherwise.

There is also the possibility that if we work steadily and vigorously some of the old ideas which did not work might be revived. Something close to the proposals which were proved to be impossible can be revised to show that I was right.

A body of scientists must have something to do. *Si vis bellum para pacem.**

BENEFACIUS: There has been criticism of Los Alamos for working on peaceful aspects like nuclear rockets or the Sherwood project.

CHORUS OF SHERWOOD SCIENTISTS:

We have twelve approaches
to the problem of peaceful fusion.

Six are good and two might
even be promising.

Neutrons abound; the
instabilities are small.

A breakthrough is just beyond the
horizon.

TOTILUS: As I mentioned to some of you ten years ago, one should think of a new idea.

ULFILAS: I mentioned that some twelve years ago.

TOTILUS: Production of all fissionable material must be enthusiastically increased.

ULFILAS: Why? Isn't our stockpile infinite? Although I agree that there are degrees of infinity-countable and noncountable.

It seems to me that the interesting concept of "overkill" is attacked by people on the left because it is wasteful, i.e., not economically sound, whereas people on the extreme right support it for psychological reasons—it gives them a feeling of virility, which they otherwise miss.

TOTILUS: According to the calculations of my friend Hermandus Canaan, with whom I discussed the subject in detail, if only fifty to eighty million people are killed, the country can rebound vigorously in forty to fifty years, and the forward march of the consumer economy will resume.

Shelters are important. Libius has written that one can improve one's chances of survival by a million, or maybe as much as a billion.

ULFILAS: How? If this chance after improvement should be of the order of one, then it must before have been only one in a million or one in a billion. How does that jibe with sixty million people being killed, which is one-third of the population?



*If you want war prepare peace, Really, *Si vis pacem para bellum* (If you want peace prepare war).[3]

TOTILUS: You see, that all depends. If we improve our weapons, the chances might be much greater. A toothbrush can be improved indefinitely, as, I believe, Manilius said. ^[4]

GREGARIUS (*scolding everybody vigorously except Totilus, to whom he makes a mild reproach for talking too much*): My committees state almost unanimously that our posture has deteriorated and needs considerable firming up both front and rear.

TOTILUS: One will never be sure without testing.

BENEFACIUS: One should really make more calculations.

TOTILUS: Perhaps you remember we discussed this fourteen years ago.

ULFILAS: A report which I wrote sixteen years ago mentions that very explicitly.

FOS-TERASIS: We have had very bad luck recently. According to the laws of probability it cannot continue indefinitely. Given enough testing, progress will be assured.

ULFILAS: I doubt it.

BENEFACIUS: That is right.

TOTILUS: My friends from the Brand* Corporation have computed that the danger of fire storms and fallout has been vastly exaggerated. Also, people who try to prevent testing exaggerate the effects of the tidal waves. One could have a million megaton explosions without the waves reaching the Rocky Mountains. I do not know where the real danger point comes, but many more explosions can safely be made in a war than people think at present.

BENEFACIUS: That is not right.

ULFILAS: Somehow these things seem to me not good. I agree that we must be strong, but it is as futile not to test as to test. Our only cleverness recently was to induce the Russians to test underground too.

VERTIHUMERUS: It is *not* futile to test, and it is *not* futile not to test. I keep my guarded pessimism.

BENEFACIUS: Why should the neutron bombs lead to such a great advantage? I agree to a possible small advantage. In the wars of the eighteenth century there were nice close formations marching with officers and drummers in front. A neutron bomb would have been useful then; it could have killed the whole group without ruining the wristwatches of the officers.

ULFILAS: I don't think there were any wristwatches in those days.

BENEFACIUS: That is right.

TOTILUS: Small bombs would enable one to have a lot of small wars. If one should exercise additional self-restraint, these might be contained. And perhaps, even in the eighteenth century a Napoleon would not have been possible.

*German for conflagration.

AN INVERTED JACOB'S LADDER *appears, and a Brand Corporation scientist starts climbing it to advocate conning and concealing nuclear explosions underground.*

CHORUS OF SPACE SCIENTISTS:
*Facilis descensus Averno
 Sed revocare gradum superasque
 evadere ad auras,
 Hoc opus hic labor est."*

ULFILAS: That must mean that it is more difficult to conceal testing up in space than underground. **If** you are quoting Virgil, as you seem to be doing, you must know the end of the story. ^[6]

I must say that my main worry is not war as a result of premeditated action, but accidents. If the probability in any one year is alpha, then—

TOTILUS: Accidents, like mutations, are not always bad. You forget, Ulfilas, that there is perhaps a small probability *beta*—(*catching himself*) not so small, I should like to say—that something good can come out of it.

ULFILAS: It seems to me that we should all go more into space. This might be a tremendous distraction for all of us, for many reasons.

I am in favor of hyperbolic orbits and space research. A lot of spare energy can go into it. It stimulates the economy as well, and the rivalry is perhaps less dangerous there.

TOTILUS: I like parabolas myself. It is on these, you see, that you can show strength and deliver bombs.

BENEFACIUS: I like ellipses. They are useful for communication satellites and weather prediction.

TOTILUS (*angry for not having said that himself especially since elliptical orbits can also be used for ejecting clean bombs*): I might agree to that. They might be important for the uncontaminated countries.

SCIENTIST WITH LAPSED Q CLEARANCE (*looking upon them with pity*): I too have consulted for many years. But now I am studying the astronomy and the biology. Is better. Come, Ulfilas, let's go have drink. **Finis**

*It is very easy to descend to hell, but to retrace one's steps and reach the upper regions, that's the task, that's the toil. [5]

[1] Livermore, of course.

[2] Sherwood was the name of the research program at Los Alamos on controlled fusion.

[3] A Roman proverb.

[4] John Manley actually said that a toothbrush can not be improved forever.

[5] From Book 6 of Virgil's *Aeneid*.

[6] The significance of this reference to "the end of the story" is not clear.