Letter from Washington

Biological warfare: momentous decisions on flimsy evidence?

Nicholas Wade

The spectre of chemical and biological warfare has risen again and is seriously eroding the already frayed relations between the United States and the Soviet Union.

A series of problematic incidents, which in normal times might well have been readily explained and laid to rest, have instead been generally subject to the worst interpretations. The suspicion is growing in the United States that the Soviet Union, in violation of various treaty agreements, has used nerve gas in Afghanistan and has stockpiled biological weapons at Sverdlovsk.

Neither allegation is proven; both may be entirely false. But as long as they remain unresolved, they raise doubts and distrust. The dangers of such an atmosphere are far from theoretical.

A serious escalation that could spark off an arms race in chemical warfare is already afoot in the U.S. Congress. The Administration has for long avoided acquiescing to the chemical corps' desire to replace existing stockpiles with binary weapons. But the decision was taken out of its hands when Missouri Democrat Richard H. Ichord proposed an amendment to the military construction bill, authorizing $3.2 million for building a binary nerve gas factory in Pine Bluff, Arkansas. The amendment was passed by the House in June this year and seems at present all but certain to be approved by the Senate as well.

The consequences of this hasty and ill-considered step could be profound. Contrary to the implication of many recent press stories, there is no hard evidence that the Soviet Union has made any effort to increase or improve its chemical weapons stockpile in the last decade. For the United States to alter this valuable *status quo* by building a basically unnecessary binary munitions plant would be an act of little foresight. The Soviet Union might feel bound to respond, and a chemical arms race would ensue. The most likely arena for a nerve gas exchange is Europe. Since soldiers are easily protected from gas, it is civilians who would suffer.

As if chemical warfare were not getting badly enough out of hand, the genie of biological warfare is stirring dangerously in its bottle. The recent advent of the new tools of genetic engineering are yet another reason for hoping it stays firmly encapsulated. But the incident at Sverdlovsk threatens to destabilize the *status quo* as well as to poison the whole structure of arms control treaties between the United States and Soviet Union, maybe for years to come.

The incident at Sverdlovsk was an outbreak of anthrax which occurred in April 1979. So much is agreed, but little else. Rumors started reaching the United States that the cause of the outbreak was an explosion at a biological warfare establishment in Sverdlovsk which had released anthrax spores and infected the local population. Intestinal anthrax can be contracted from eating infected meat, but the symptoms encountered in the Sverdlovsk outbreak resembled those of pulmonary anthrax, so the rumors went.

The implications of the report are extremely serious for, if true, it would mean that the Soviet Union is probably in violation of the 1975 convention which prohibits the stockpiling of biological weapons. Standard diplomatic procedure called for the United States to raise the incident in discussion with the Soviet Union and request an explanation. It was at this point, in retrospect, that an error of considerable magnitude was made by the United States, an error that bears the imprint of security adviser Brzezinski's approach to U.S.–Soviet relations. The request, when put to the Soviet Union in March this year, was couched more in the form of an accusation. Further, the accusation was leaked by an American official some two days after the Russians had received it. Being put on the defensive by this breach of diplomatic practice, the Russians refused to discuss the incident any further or to provide any detailed explanations. They have sat pat on their statement that the outbreak of anthrax in Sverdlovsk was caused by contaminated meat.

The impasse has fueled suspicions that the Soviets have something to hide. Yet the suspicions may be totally incorrect. Intestinal anthrax has long been a serious problem in the Soviet Union, and Sverdlovsk is at the edge of a high-risk anthrax zone. Western doctors may think they know the difference between pulmonary and intestinal anthrax but their experience may be limited. On the other hand, there is one serious fact which is at present not at all easy to dispose of. In 1975, the presumed identity of three biological warfare factories in the Soviet Union was leaked by Pentagon officials: the three sites were Zagorsk, Omutninsk and Sverdlovsk. If the 1979 incident had happened anywhere else in the Soviet Union it could probably be dismissed. That it had to happen at one of the three towns already under suspicion of harboring a biological warfare facility is a conjunction that cannot be disregarded.

Leaving the incident unresolved is an invitation to the further worsening of relations. It is a gift to demagogues of the extreme right wing and to those who have always opposed arms limitations agreements. 'American arms controllers', says Republican Senator Humphrey Gordon of New Hampshire, 'have assumed that both the United States and the Soviet Union have a common interest in continuing efforts to control the arms race, that the Soviets negotiated arms control agreements in good faith. . . . We imagined Soviet intentions were the mirror-images of our own. Now, however, the whole philosophical underpinning of American arms control theory has been unraveled. There is now strong and easily comprehensible evidence of flagrant Soviet violations of two solemn arms control treaties.'

What is alarming about Humphrey's argument is that it is all true, except for its premise that the alleged violations have been proved, and even the premise is widely believed to be true in the United States. Resumption of the arms race in either chemical or biological warfare can be to no side's interest. But the restraints against such an outcome are undergoing a period of severe strain.

Meeting Organizers Please Note

Information for inclusion in the *TIBS* Noticeboard should be sent to The Staff Editor, 14A Regent St., Cambridge CB1 2DB, U.K. At least three months is needed if the announcement is to appear in advance of the meeting or registration deadline. The major meetings are advertised in the quarterly centrefold Noticeboard. The smaller meetings appear in the Noticeboards published in the intervening months.

7 Rules: how to write a poor proposal

Recently I reviewed proposals for a national agency. By the time the panel was dismissed and I stumbled home from Washington, I realized that most writing textbooks leave out an important instructional area: all tell us how to write well, few explain how to write poorly. And the quintessential area of the proposal – that literary keystone in the scientific marketplace – is completely neglected.

I therefore offer these seven rules. Those of you who like myself are already following them on an instinctive, hit-or-miss basis will in future be able to do a more systematic, productive job.

Rule 1. **A proposal is a murder mystery**

Keep your reader guessing. Do *not* put a clear statement of your objectives at the beginning. On no account write a statement of the problem, giving the background and proposed solution.

Most important, *do not write an abstract.* It comes first, and will be a dead giveaway.

Instead, build the suspense. Remember, a proposal is like a murder mystery. If your readers figure out the solution, they will stop turning the pages.

Rule 2. **Don't bother with detail**

Skip the methodology. It's boring and, besides you'll figure out the step-by-step procedures once you get the money. Don't prepare a timetable. It's all a fantasy, anyway. Any reasonable individual can handle problems as they arise. Let the future take care of itself.

Rule 3. **Separate objectives from procedures: make sure there is no logical connection between them**

Do not match up your objectives with the ways in which you plan to achieve these objectives. Instead, separate objectives and procedures and keep them firmly apart. If you connect them, your reader is sure to understand what you intend to do with the money.

Rule 4. **Be muddled**

To do this most effectively, do not state the problem. Do not explain its significance. Above all, do not give related, theoretical underpinnings. These can be dangerous if you want the reader to follow your argument.

Rule 5. **The budget should have no connection whatsoever with the narrative**

Many of you struggle to integrate the narrative with the budget, painfully explaining what each person will do for the money.

Forget these tortured explanations. Instead, make sure that the budget has no connection whatsoever with the narrative. If possible, prepare the budget as an entirely separate section and never refer to any connections between the numbers and the written text. Consider it, if you will, as a sort of crossword puzzle. Line 7 across in the budget, $4327 for administrative assistance. What kind of assistance? To whom? Why? Leave these enticing questions to your resourceful reader.

Rule 6. **Don't worry about being cost-effective. That's only a government phrase**

The cost is not the bottom line in a proposal. It is the ideas that are important. Do not concern yourself with the price tag, or with lengthy comparisons of alternative methods. Above all, avoid the question of whether the project is worth the money. That's bad thinking, and will lead to bad writing.

A few words on content

Some people stress the importance of the problem statement. You, the writer, are enjoined to pick a problem that (a) has not been done or (b) has been done poorly or (c) has been done incompletely.

Such problems are not easy to find. However, there is a solution: *pick a problem that is completely insignificant.* In this way, you will have a clear field. If the problem is truly insignificant, no one will have touched it, and you'll be free to mine a rich vein all on your own.

To guarantee the insignificance of the problem, overwrite its importance. For instance, instead of saying, 'This problem is important', try, 'This problem is not unimportant'. This can be further expanded to 'It is not an exaggeration to consider this much-neglected area a major touchstone in . . .'. If you get tired of touchstones, try keystones. Watersheds are also useful.

Rule 7. **Follow this style guide**

Don't use subheads. These only divide up the subject, and make clear to one and all the details you forgot to include. Instead, run the entire text together. In this way, omissions will not be as noticeable.

Use the passive. Cloud antecedents. Favor strings of nouns used as adjectives. Use the local jargon – when stuck for the *mot juste*, try 'logical', 'relevant', 'conclusive' or 'mechanism'.

Don't rewrite. Your first words are best. There is no way you will ever recreate the pristine quality of your original thoughts, so do not try and tamper with them through revision, deletion, or rearrangement of arguments. Reality is a seamless web, and your job is to keep it as close to that state as possible. Do not provide logical paths for the reader. He's on his own!

Inflate all language. Remember Newton's maxim that 'More is in vain when less will serve'. Revise it to read, 'Less is in vain when more will serve'. Be wordy. If possible, be wordy and verbose. Inflate all simple words and phrases. Don't forget to inflate the budget, too.

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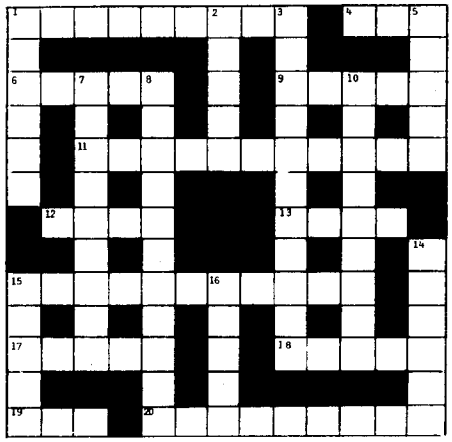
CROSSWORD COMPETITION



Compiled by Elizabeth Irving

All entries will be opened on 1 December. There will be a prize of a Phaidon art book for the first correct solution opened. Send your answers to:

TIBS, Elsevier/North-Holland Biomedical Press, 14A Regent Street, Cambridge CB2 1DB, U.K.

Across

1 Carbohydrate that can be made from a lost cage (9)
4 Bulky component in the diet (3)
6 As yet respiration rate changes in presence of light (5)
9 Colour in effluent reveals what is excreted (5)
11 Altered pale mammals to form cell membrane (11)
12 Stir this buffer (4)
13 Grab index to determine whether an inhibitor will do this to an enzyme (4)
15 Possibly pay Peg night duty for microbiological skill (5,6)
17 Crazy game with oxygen for oxidation further along the chain (5)
18 Medical officer ahead of backward university scholar, was Nobel-prize winner (5)
19 Fuel for fats? (3)
20 Without radioactive element cruel tones altered charged particles (9)

Down

1 Amino acid residue found in ugly cylinder (6)
2 Oxygen/leucine mass a source for fat soluble vitamins? (5)
3 Latin horse's tranquilliser produces stable state (11)
5 Teach about a follicular layer (5)
7 Amino acid consumed around Greek city of ancient fame (9)
8 Far star seen to move chemical groups about (11)
10 Mum mixes one gin to get response from lymphocytes (9)
14 Amino acid is made for carboxy termini of hormone release factors (6)
15 Rot in post office for precursor prefix (5)
16 Modified guanine can be by sea (1,4)