UNIVERSITÉ DE PARIS VII

DÉPARTEMENT
de MATHÉMATIQUES

TOUR 45-55
9, quai Saint-Bernard
75 - PARIS V°
TÉL. 336-25-25 - Poste 37-61

Paris, le April 22, 1971

Dear Deligne (resp. Kuyk, Poitou, Serre),

You invite me to a 1972 Summer School on Modular Functions that will be sponsored by NATO. I'll not participate in it under such conditions, and you do know it full well since I already told you several months ago.

I am not for sale to any kind of military; I made once in my life (in 1965 at the Boulder Conference on Algebraic Groups) the mistake to attend a meeting sponsored, totally or in part, by a military organization, and I think that is already far too much for my taste. I don't see any connection between modular functions and such an institution as the North Atlantic Treatise Organization. If you see one, then it shows that the educative virtues of Mathematics are frankly quite poor, since there are everywhere in the world tens of thousands of first year students who would be able to explain you that a scientist cannot decently cooperate, even AND MAINLY for the sake of science, with pecple whose only scientific vocation is to turn scientific progress into weapons. I would rather take money from our Paris pimps - they hardly ever kill anybody - or from the american branch of the Maffia (since they want to get into the "legitimate business" they might be interested in sponsoring modular functions, if only for the prestige...)

I also observe that, according to Serre himself who told me today after I inquired about it, the french CNRS that "cannot support" the meeting according to your letter was nevertheless willing to support an eight days business. If such was the case - I am now trying to get more detailed information - then the only problem would have been to pay living expenses to the participants for one more week. Even if no other decent source of money was available - which I understand you did not check fully - I can hardly believe that the distinguished mathematicians you are inviting, nearly all of whom have got comfortable regular salaries, could not afford to stay a week at their own expenses in a (possibly second rate) european hotel; or that they show so little interest in the subject that supposedly fascinates them, modular functions, as to reject outright the idea to spend a modest amount of money in order to be able to meet together for two weeks (they take vacations, don't they ?). Are we driven by the so-called "ethics of knowledge" as so many scientists claim to be, or rather by a twisted sense of dignity according to which we make mathematics only if we can get full travel and living expenses in bourgeois surroundings, even if that means begging money from military organizations that have made so much in order to throw discredit on Science with so many people ? Can you imagine Van Gogh saying he could not paint until he would get money from NATO ? Are we intellectuals, or traveling salesmen ?

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I must also say that I find it very fishy, to say the least, that the organization committee for this Summer School included from the outset three mathematicians working in France and Mr Kuyk. I do not know him personally, and what I know about him is that (i) he has strictly nothing to do with modular functions, but (ii) he already organized several NATO-sponsored meetings in Antwerp. This makes it rather probable that the organizers of the meeting more or less knew in advance they would eventually turn to NATO for support. No wonder you did not get quite enough money from other quarters!

It seems to me that Mathematics - or at any rate western and westernized mathematicians - are in a rather sad condition. The only meeting on automorphic functions I already attended (in Boulder) was partly supported by the U.S. Air Force (or perhaps Navy ?). I was invited in 1967 to spend two weeks in Princeton and Philadelphia - but more than half the money came from the Institute for Defense Analyses, so that I had to tell my sponsors I would rather come on half the amount they were offering me (which prompted them to make for the difference through "regular" university money, more than half of which, in Princeton and quite likely in Philadelphia as well, is actually Department of Defense contracts). Last year in Princeton I had to turn down several invitations to attend lectures at the same Institute for Defense (sic) Analyses, a military think-tank, or rather brothel, headed by General Maxwell D. Taylor (his interest in scientific progress must be of a rather special nature...), the mathematical branch of which (coding and decoding) is, strangely enough, located in the mathematical capital of the United States, and where an international audience flocks from time to time to sip tea and listen at handsomely paid lectures in the only two rooms of the structure that are open to people who don't have a security clearance - meanwhile, a handful of courageous local students are staging demonstrations against IDA and trying to expell it from the Princeton campus. Then I had to turn down an invitation to attend the opening ceremonies of the new Mathematics Building of the University, where half a dozen of mathematical geniuses from all over the (free) world would lecture, because the thing was partly supported by the U.S. Air Force. There was a subsequent colloquium on Differential Geometry - but it was partly sponsored by the U.S. Navy. Then I was supposed to attend the Maryland Conference on Several Complex Variables and Group Representations at the beginning of April - fortunately I found out by mere luck that this one was supported by the U.S. Army (they show no lack of imagination in the choice of their sponsors). I did not myself get a military contract while I was at the Institute - I suppose they knew I would have boarded the next plane to Paris - but the very first thing I learned when I arrived there was that a student of mine who had taken my advice to spend some time (two years, it turned out) at the Institute had been paid mostly through military contracts, and that lots of other temporary (and possibly permanent ?) members of the Institute were in the same situation - not to speak of the fact the Director of the Institute, Mr Karl Kaysen, had been one of the main advisers of the late President John F. Kennedy for, of all possible things, "national security". I came back in France during

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the summer, in time to learn that Grothendieck was resigning from the IHES because he had found out that (1) this worthy purely cultural institution was getting part of its money from french military sources (2) he was the only permanent member willing to do anything about it. I got some time later your first invitation to participate in a Summer School on Modular Functions; it was already specified that the conference would be sponsored by either the french CNRS or NATO, and I answered you at once that as far as I was concerned there would be no NATO. Then I learned, once more by mere luck, that the Invitation Committee of the International Congress in Nice had given itself as a president Mr Adrian A. Albert, who happens to be not only the Dean of the College of Arts and Sciences of the University of Chicago but also one of the trustees of the Institute for Defense Analyses, so that they had chosen the only American mathematician who has got a really high position inside the U.S. scientifico-military bureaucracy against which thousands of students have been fighting since several years. Are mathematicians totally cynical, or are they merely idiots ?

As a provisory conclusion, it looks to me as if there were quite a number of people including yourselves, who don't mind to let us understand that if we want to make mathematics we had better to give in to the military. One of you, gentlemen, after a heated argument about Grothendieck's "Survival" and similar critical estimates of the current behaviour of scientists in our society wrote me that I should adhere to the beautiful american slogan I had advertized in Le Monde during the Nice congress, "Make love, not war" . Well, apparently we shall have to explain him that what these young Yankees mean is not that you should make love to those people who make war or prepare for it, and that introducing "pure" mathematics or "pure" mathematicians somewhere does not turn a brothel into a church - it merely turns "pure" mathematicians into (possibly respectful) whores. If we believe we can take anybody's money for the sake of Mathematics and/or of our Complete Works, if we behave as if we agreed with the most corrupt politicians, those who think that Science and Education are merely branches of Defense, then how can we ever hope to win back the respect of young people ? or of ourselves ? The ultimate test of sincerity for a mathematician is his willingness to give up some of his Mathematics, not to speak of his money, in order to adhere to his own code of morals (assuming he has got one, and that it does not reduce to putting Mathematics above anything else). Your invitation amounts to asking me to do exactly the opposite. I do know perfectly well what I am loosing, but I shall not give in. I shall merely send you my most enthusiastic thanks for your bright idea to stage a conference on Modular Functions which you knew in advance I could not possibly attend without betraying myself.

R. Godement

NATO: Scientific Affairs Division a Miniature NSF for the Alliance

Brussels. NATO is a wobbly military organization, but it does contain a small and inconspicuous branch that functions well as a sort of miniature National Science Foundation for the 15-nation alliance. This is NATO's Scientific Affairs Division, which, since its creation in 1958, has evolved into one of the more unusual scientific offshoots of the cold war. Though the Warsaw Pact countries routinely wish damnation on NATO, Eastern European as well as Soviet scientists not infrequently take part in scientific conferences sponsored by the division. And though France has pulled out of the military side of NATO, forcing relocation of its headquarters from Paris to Brussels, she still participates in its scientific branch. If any further examples be needed of basic science's indifference to ideology and to the source of support for research, it is to be found in the NATO Scientific Affairs Division. Furthermore, the genesis and history of the division at least hint at some universality in the American pattern of military organizations' generally having a freer hand than their civilian counterparts in supporting academic science. Such was the experience with the Office of Naval Research at the end of World War II, and it is being repeated today in the Defense Department's Project Themis for building up research in lesser institutions. Asked why NATO should be a source of support for basic research mainly associated with academic institutions, Rudi Schall, a German physicist who has been acting head of the division for the past 2 years, frankly replied, "Because it's much easier for a military organization to get the money." Actually, it is not very much money as scientific budgets go, but the division has so arranged its activities that, per dollar spent, it probably can match any organization for the number of people it draws into its programs.

Not at all secret, but generally unnoticed among the mightier affairs of NATO, the Scientific Affairs Division has an annual budget of only $4.4 million. Nevertheless, by following a strategy aimed at getting the widest possible effect from its relatively limited resources, it ranks high in the world as a source of support for postgraduate scientific training and scientific conferences. In addition, it has a modest program of project support, and at present it is looking into new activities, with particular attention directed toward computer technology and oceanography. The postgraduate training program currently provides funds for more than 1000 scientists to train in universities and research institutes throughout the alliance. About half study chemistry and physics; the remainder are distributed among virtually all other fields of science, with a small number in the social sciences. Since 1959, when the fellowship program was established, it has provided support for more than 8000 scientists; this validates the division's claim to being the

underwriting agency for a "significant part of post-graduate scientific education in the West." In each country, a government organization selects the fellows (NSF handles it in the United States), and the number of fellows appointed by each country is related to its financial contribution to NATO and the amount the country chooses to attach to its fellowships. Schall said that for study in the United States, which is the most popular destination among the fellows, the stipend can run as high as $5000.

Iron Curtain Visitors

The division's Advanced Study Institutes Program is another example of the way in which a relatively small sum of money can be used to involve the participation of a large number of persons. The division currently sponsors about 50 conferences, most of them held during the summer in remote but comfortable European locations. (Schall noted wryly that "two weeks on a Greek island seems to be very good for scientific thought.") Last year the Institutes Program drew an attendance of over 3500 persons. Over the past 9 years, some 30,000 scientists have taken part. About 10 percent of the participants are from non-NATO countries, mainly Sweden and Switzerland. According to Schall, about 3 percent of the total number of conferees come from Eastern Europe or the Soviet Union. When the conferences are jointly sponsored with other organizations, as is sometimes the case, the costs for the non-NATO participants often will be assigned to the other organization, Schall explained. But he said there have been cases in which NATO has footed the bill for non-NATO participants, including those from Warsaw Pact countries, with nothing but a spirit of scientific brotherhood pervading the situation. Schall reports, "the NATO leaders said we can invite anyone we want, as long as it can be justified on scientific grounds." Among the conferences in recent years were those on molecular aspects of protein structure and function, in Venice; on structure of the lower atmosphere and electromagnetic wave propagation, in Wales; and on engineering applications of statistical extremes, in Portugal. About two-thirds of the conferences are reported in book-length volumes, which the division says are "usually acknowledged as authoritative surveys of their subjects."

The division also spends about $700,000 a year to help support some 300 research projects in universities and research institutes of the member nations. These cover a broad spectrum of the basic sciences, and, in substance, look very much like the sort of work NSF might support.

It may be assumed that, among the relatively small group of American scientific leaders who have worked during the postwar years to establish close links between academic science and military organizations, the scientific branch of NATO was singled out as having particular significance, for some of the most outstanding figures in this group have taken turns as full-time head of the division or of its direct predecessor, the NATO Science Committee. The first of these was Norman F. Ramsey, the Harvard physicist, who has served in a variety of high-level government advisory positions. He was succeeded by Frederick Seitz, who later became president of the National Academy of Sciences and chairman of the Pentagon's topmost science advisory body. Then came Professor W. A. Nierenberg, physicist and current director of the Scripps Institution of Oceanography. The next was W. P. Allis, physicist, of Massachusetts Institute of Technology; he was succeeded by J. L. McLucas, also a physicist and now president of The Mitre Corporation. Schall, who came from the joint German-French Defense Research Institute at St. Louis, France, became acting director of the division in 1966; now that he is returning to the institute, the directorship is to be taken by a Norwegian physicist, Gunnar Randers, who has held the post of managing director of the Norwegian Institute for Nuclear Energy. Isidor Rabi, the Nobel laureate physicist who has long been influential in science-government relations in the United States, never served full time with the division, but he has been an adviser, and he is considered to be an important figure in its affairs. When the division celebrated its tenth anniversary last year, the speakers included Rabi and another veteran of science policy-making, Sir Solly Zuckerman, who is the British government's chief scientific adviser. Zuckerman on that occasion addressed himself to the question of why NATO was supporting science. The answer he offered was twofold: (i) "the effectiveness of defense policy depends on the use it makes of science"; (ii) NATO is supporting science because scientists can make valuable contributions to defense policy-planning. On this latter point, Zuckerman reported, "Some years ago I was provided the opportunity at the annual NATO military exercise . . . to challenge the concept of tactical nuclear warfare. My argument, based on detailed analyses, was that the use of these weapons in field warfare in Europe would immediately lead to physical conditions of destruction which were totally incompatible with military operations." Zuckerman added that the NATO supreme commander encouraged him to publish his analysis. "Since then," Zuckerman stated, "my conclusions have been substantiated in other studies carried out in England, and also, I seem to remember, by at least one carried out" in the NATO Technical Center.

Nevertheless, it might be pointed out, NATO remains prepared to use nuclear weapons in the defense of Western Europe.

Narrowing the Gap

On a few occasions the Scientific Affairs Division has served as the spawning ground for proposals for new international activities in science and education. One of these proposals, which now seems to be on the brink of fruition after a good deal of uncertainty, is for a European Institute of Technology; it can be traced back to a study that the NATO Science Committee made in 1960, on "Increasing the Effectiveness of Western Science." Later the proposal was taken up by a committee headed by James R. Killian, Jr., of M.I.T., and in 1967, when concern about the technological gap was flourishing, a detailed proposal was worked out at a conference sponsored by the Scientific Committee of the North Atlantic Assembly and the Foreign Policy Research Institute of the University of Pennsylvania. Support was provided by various organizations, including the European Cultural Foundation and the Council of European Industrial Federations. When the project had evolved into a design for an advanced school of management, responsibility for further planning was assigned to the Organization for Economic Cooperation and Development. Britain, West Germany, Holland, and Italy have promised funds, though France has announced that she will not participate.

Like many other scientific organizations that have settled into a program of activity, the NATO Scientific Affairs Division is also looking for something else to do. In recent years its budget has experienced only slight

...rch, rising by about $100,000 a ... Research of direct military significance is outside its province, since ... is handled by a separate body, the Defense Research Group, which is simply a small secretariat for coordinating the military research activities of the member nations. And NATO's two research facilities, the Anti-Submarine Warfare Center at La Spezia, Italy, and the Technical Center at the Hague, are administered by the military branches of the alliance.

"What we need," Schaff said, "is a new impetus." And, for this purpose, the division has been looking into oceanography and computer software. Just how it might involve itself in these fields is not clear, but one administrative form that NATO finds attractive is that of the Von Karman Institute for Fluid Dynamics in Belgium, referred to as a NATO-related institute. It is financed by all the NATO countries, and the Scientific Affairs Division also provides some support through grants and fellowships. In oceanography, Schaff said, the NATO role would probably be confined to coordinating existing activities, but in the computer field—which the division has had under study for 2 years—there might be an actual research facility, closely linked to NATO, but, on the style of the Von Karman Institute, administratively independent of it.

At this point it cannot be said whether these plans will ever be carried out. For one thing, they involve subjects that are already being handled by existing organizations that, in many cases, are having a difficult time getting resources. The division's programs—fellowships, conferences, and research grants—do not infringe on anyone's activities, and are welcome no matter how many other organizations are in the same business.

But perhaps of greater importance is the fact that American scientific leaders no longer seem to consider the division as important as they once considered it. Its first five heads were Americans, and rather high-ranking ones. Its new chief is one of Norway's most distinguished physicists, but the United States is the centerpiece of NATO—an American has always been its top military commander, and those NATO matters in which the United States has shown little interest are not among the most thriving in NATO affairs. —D. S. GREENBERG