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The USSR Academy of Sciences: Independence and Political Control

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The USSR Academy of Sciences: Independence and Political Control

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The USSR Academy of Sciences: Independence and Political Control

Key Judgments

The prestigious USSR Academy of Sciences, long relatively independent of control by the Communist Party of the Soviet Union, is now more under the influence of the party than it has ever been before. In fact, the potential now exists for the party to dominate academy policy. The extent of party influence can be seen in:

- The growth of party membership among academy members. Since the academy's December 1981 elections, for the first time in its history, two-thirds of its members have belonged to the party.
- The growing integration of the academy leadership into both the party and the government structures.

The growth of party influence is impressive and could have significant results:

- Soviet science would increase its emphasis on applied (result oriented), as opposed to basic (pure), research.
- That emphasis would weaken the underlying framework of Soviet science and reduce chances for future scientific breakthroughs.
- Political expediency would supersede scientific integrity and hinder real scientific advancement.
- Soviet scientists would tend to promise more than they could deliver—much as Soviet industry does currently—and lose their credibility with the Soviet leadership.

To the United States the primary relevance of the politicization and consequent decline of Soviet science would be a probably accelerated effort by the Soviet Union—through whatever means—to obtain advanced technology from the West. A decreasing ability by Soviet science to provide the results that the Soviet leaders are seeking—more energy, more productive agriculture, and more efficient technology—would surely lead to an increased reliance by those leaders on technology transfer.

Despite these efforts by the USSR, a return to the moderately high levels of US-Soviet scientific cooperation that existed in the mid-1970s would be unlikely, even if general bilateral relations improved significantly:

- US scientists would hesitate to cooperate with Soviet counterparts whom they perceived to be preoccupied more with political than with scientific concerns.
- Goals would probably diverge—with potential Soviet participants being interested in applied research topics (and existing US technology) and their US counterparts preferring basic research.

The USSR Academy of Sciences: Independence and Political Control

The Academy of Sciences is the leading scientific organization in the Soviet Union, a country that places extraordinary emphasis on the potential benefit of science to the state. Ever since the country's 1917 revolution, Soviet leaders have looked to science to play a leading role in the "building of socialism"—the development of a modern industrial and military state. Partly because of the reverence with which the Kremlin has regarded science and partly because of the long history and strong traditions of the 250-year-old academy, that institution has been subject to less control by the Communist Party of the Soviet Union (CPSU) than any other major Soviet organization.

Party pressure on and control over the academy have increased, however, as Soviet leaders have become dissatisfied with the organization's scientific output. The party has pressured the academy to place more emphasis on applied, goal-directed research than on basic research, the traditional preference of most academy members. The party has also grown concerned about what it views as the unacceptable degree of ideological nonconformity in the academy, as typified by dissident Academician Andrey Sakharov

Since the most recent biennial membership elections (December 1981), for the first time in the history of the academy more than two-thirds of its members are also party members. Because a two-thirds majority is the margin required to change academy statutes affecting the organization's structure and operation, the party is now in a better position to dominate the academy's internal structure and thereby control the academy than it has ever been before. The implications of this change in the party presence in the academy are perhaps best understood in the context of the role of the academy in Soviet scientific life and of the relative independence with which the academy has operated in the past

Background and Structure

Since the time of Tsar Peter the Great, who founded the forerunner of the USSR Academy of Sciences in 1724 as part of a general effort to Westernize Imperial Russia through scientific-based progress, a continuing element of the academy's history has been the linkage of science and progress. An institution with little love for Marxism at the time of the 1917 revolution, the academy survived that upheaval while other tsarist institutions were destroyed. It did so mainly because the leaders of the new Russia—like those of the old—closely identified scientific advancement with national development.

The academy did not merely endure the revolution, however—it prospered. A largely honorary body with almost no institutional base of its own in 1917, it subsequently experienced a rapid expansion in number of both members and subordinate organizations (an academician is a full academy member):

Year	Academicians	Corresponding Members	Total
1925	41	105	145
1949	146	255	401
1960	162	372	534
1970	245	448	693
1981	265	538	803

In 1925 there were only 10 institutes subordinate to the academy; now there are about 230

Today the academy dominates science in the Soviet Union. Subordinate to and funded by the Council of Ministers, the top government body, the academy is

formally responsible for the development of all basic scientific research in the country. It works closely with the State Planning Committee (Gosplan) and the State Committee for Science and Technology (GKNT) in implementing science policy and establishing the relationship between science and the economy. While the formal responsibility for formulating science policy rests with the CPSU, the party relies heavily on the academy for advice.

To carry out its role, the academy has an enormous organization employing about 150,000 scientific workers in a variety of subordinate bodies:

- More than 300 separate scientific establishments.
- Approximately 325 scientific councils, committees, commissions, and associations.
- A publishing house, Nauka (Science), which issues more than 150 scientific journals, in addition to other publications.
- Regional centers and affiliates throughout the country.

In addition, the academy maintains close relations with the 15 republic academies of sciences, each of which maintains an organization parallel to that of the national academy; in all, the republic academies have more than 300 institutes.

Large though it is, the academy directly controls only about 8 percent of the total scientific manpower of the Soviet Union. This percentage is disproportionately influential, however. Typically, the leading institute in a field of scientific research is subordinate to the academy. More importantly, every major institute is directed by one of the academy's members.

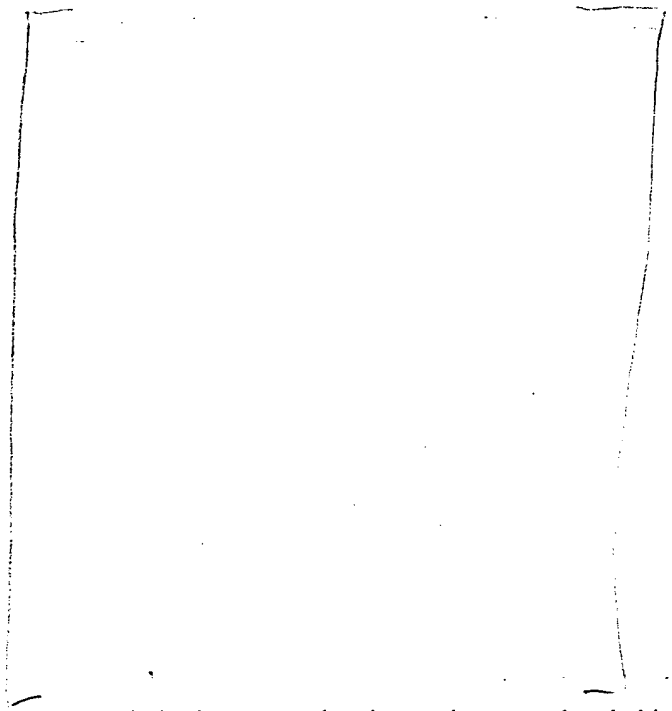
Independence

The past ability of the academy to maintain an independent role—that is, to manage its own affairs and to allow its individual members to express their opinions—has been based primarily on its electoral process: the academy is the only organization in the Soviet Union that employs a genuinely competitive secret ballot to choose its members and leaders. (Except for the chief scientific secretary, all officers and members are elected by a two-thirds majority of the academy's General Assembly. The chief scientific secretary, the "party watchdog," is selected by the academy Presidium.) This electoral process is central to the organization's tradition and prestige and is the most significant barrier between the academy and complete party control.

To both present and prospective members, membership in the academy is a highly desirable status: membership, whether as academician or corresponding member, confers a high level of prestige, a lifetime stipend, access to special stores, opportunities to travel, and other benefits. "Politicians" are among those who have found membership desirable, and the electoral process has been vulnerable to some political presssure. For example, Iosif Stalin was elected an honorary member of the academy in 1939. A few current members are also more politician than scientist:

- Dzhermen Gvishiani, a GKNT deputy chairman and the son-in-law of former Premier Aleksey Kosygin, managed to get elected in 1979 by collecting on IOUs from members throughout the academy.

- Current Chief Scientific Secretary Georgiy Skryabin, considered by many of his colleagues to be more a party hack than a scientist, was also elected in 1979 (after twice being rejected).



On the whole, however, the electoral process has held back the politicization of the academy. Most "politicians" have been rejected for membership, and those who have become corresponding members have found it difficult to achieve academician status. For example, corresponding member Sergey Trapeznikov, the chief of the Science and Educational Institutions Department of the CPSU Central Committee and a protege of party General Secretary Leonid Brezhnev's, was the only one of 24 nominees refused elevation to academician status in 1979.

The academy has also displayed some independence from the party through its expulsion process. Once elected, members can be expelled for "anti-Soviet" activities, but, as in the case of election, expulsion requires a two-thirds majority of the General Assembly by secret ballot. Members have been expelled—three have been since the end of World War II—but most of them have been political figures rather than scientists

The academy has been reluctant to expel true scientists, both for fear of creating a precedent and out of genuine sympathy with their political views or scientific achievements. Dissident physicist Andrey Sakharov has been censured by the academy Presidium, vilified in the press, stripped of his state honors, and exiled from Moscow, but no expulsion proceedings have been undertaken against him—surely because of the probability that any such motion would fail.

Growing Party Influence

Between the 1917 revolution and the 1950s, it was usually sufficient for members of the academy to serve the state; CPSU membership was perhaps considered desirable but was in no sense a prerequisite for election. Despite repeated interventions in its affairs by the party during that period, the academy remained largely independent

In the past 20 years, however, party influence in the academy has been increasing. This trend is perhaps best seen in the steady growth in party membership among academicians. Until the 1960s about half the academicians belonged to the party. Of the academicians now living, 51 percent of those elected before 1960, 67 percent of those elected during the 1960s, and 73 percent of those elected during the 1970s are party members. In the 1981 election, 88 percent of the new academicians were party members

The 1981 election results represent a watershed: now 67 percent of the current academicians (or 178 of 265) belong to the party—the ratio necessary to enact statutory changes. (See Appendix A.) Although party discipline is probably imperfect, the growing percentage of party members in the academy means that the potential exists for party policy and academy policy to become synonymous.

The trend toward party domination is even more pronounced in the academy leadership—the presidency and the Presidium—a fact that probably reflects the party's concern about the academy's direction.

- Until 1951, academy presidents had not been party members. Since then, they have been, and it now

seems highly improbable that a nonparty academician would be elected to that post.

- The percentage of party members in the 37-member Presidium, which has always been higher than that in the general membership, has been growing: from 64 percent in 1960 and 72 percent in 1970 to 81 percent currently. All of the six academy vice presidents belong to the party, as do all but three of the 16 academician secretaries. The seven members of the Presidium who are not party members are either clearly conformist—for example, demonstrated loyalist Nikolay Bogolyubov—or highly regarded—for example, Nobel Prize laureate Petr Kapitsa.

Members of the academy have also become well integrated into the structures of both the CPSU and the Soviet Government. Currently, on the party side:

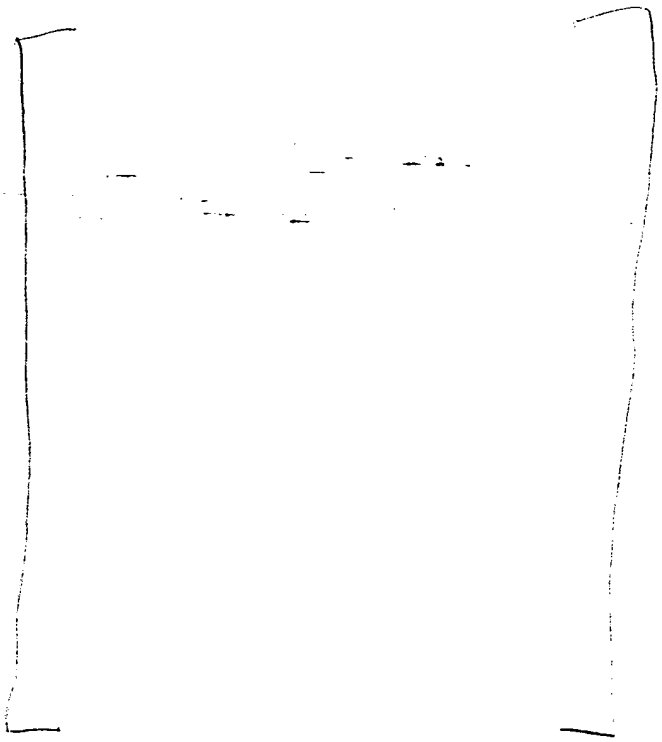
- Twelve academy members are full members of the CPSU Central Committee, and five are candidate members.
- Two are members of the party's Central Auditing Commission.
- One, historian Boris Ponomarev, is a candidate member of the top party organization, the Politburo.

On the government side:

- Thirty-two members of the academy are serving in the Supreme Soviet.

- Three hold ministerial-level positions in the government: GKNT Chairman Guriy Marchuk, a former academy vice president; Chairman of the State Committee for Hydrometeorology and Environmental Control Yuriy Izrael'; and Minister of Higher and Secondary Specialized Education Vyacheslav Yelyutin.

- Three other members hold positions at the deputy minister level.



- In addition, Brezhnev's personal physician, cardiologist Yevgeniy Chazov, is an academician.

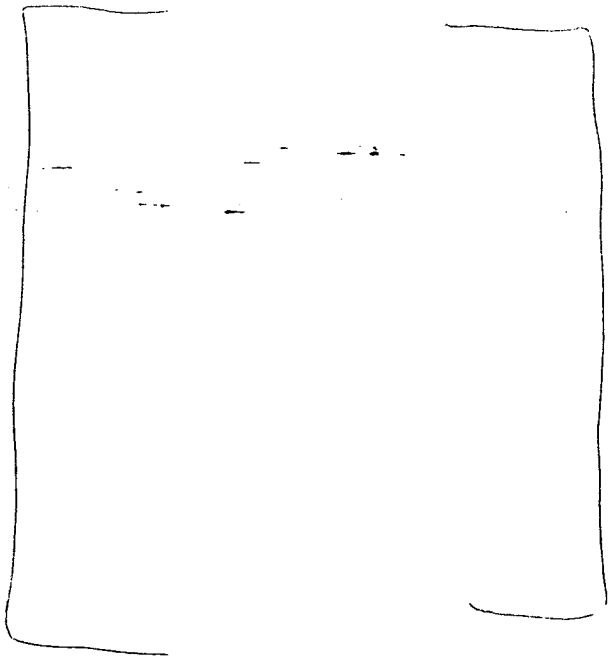
Limiting Factors

Although the membership figures suggest increasing party domination of the academy, that inference must be qualified. Many academicians may have joined the party for career rather than for ideological reasons. In recent years, for example, academicians have tended to join the party at an earlier average age than scientists who joined in the past. That pattern suggests that the current generation of ambitious young scientists perceive party membership as more necessary for career growth than did their predecessors. Other CPSU members in the academy's ranks may accept the ideological precepts of the party but not its discipline and may give their first loyalty to the academy. Thus the apparently solid two-thirds majority of party members could [illegible]porate behind the safety of the secret ballot.

In addition, the 67-percent overall CPSU membership among academicians is unevenly distributed among academy disciplines—being concentrated in the least prestigious and powerful departments.

- In the social science departments, for example, the least influential within the academy, nearly all the academicians are party members.

- In some of the most influential departments, those dealing with physics, mathematics, and biology, however, less than half of the academicians are party members.

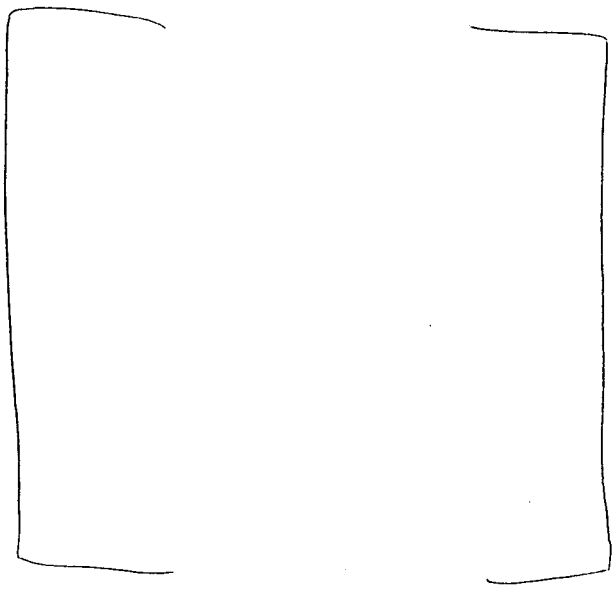


Direct Interference

While increasing its representation within the academy, the party has also accelerated its direct intervention in academy affairs. The most blatant example in recent years was its interference in the academy's 1975 presidential election (in which current academy President Anatoliy Aleksandrov was elected to his first term). Mstislav Keldysh, who had been academy president since 1961 and who was in extremely poor health, resigned in 1975, before the end of his term. Although subsequently, in the period before the election, several academicians were mentioned as frontrunners for the post, the late Mikhail Suslov, a former party Politburo member and ideologist with no formal connection with the academy, openly stated at a meeting of the General Assembly that Aleksandrov was the party's choice. The academicians obviously got the message. (Aleksandrov was reelected in March 1980.)

Another example of party interference was the creation by the academy in 1979 (probably at the instigation of the party) of the Interdepartmental Coordinating Council in Leningrad. The ostensible purpose of that organization has been to conduct applied research in such areas as shipbuilding and electrical machine building. The council has also been used, however, as a vehicle for Leningrad party boss Grigoriy Romanov to control science in the area.

Of the party's two basic concerns in regard to the academy—applied research and ideological conformity—the latter appears to be the more important, particularly in regard to the Andrey Sakharov affair. Despite pressure from the party to convince Sakharov to change his views, the academy has been ineffectual in doing so. In fact, academy-sponsored petitions against him in 1973 and 1975 were more litmus tests of ideological conformity for those asked to sign them than effective measures against the dissident. Many



academy members secretly admired both Sakharov's conviction and his scientific ability. Thus the Sakharov case has probably convinced party hardliners that the academy should be under tighter control

Neither the party nor the academy wants Sakharov to remain in the news; in doing so he demonstrates the limits of the party's authority and consequently exposes the academy to pressure from the party to deal more effectively with nonconformity. Such pressure played a role in the intervention by academy officials to end Sakharov's December 1981 hunger strike. That intervention may have succeeded in removing Sakharov from the front pages of the Western press, but the dissident was successful in gaining his objective—the immigration of his daughter-in-law to the United States. Even though it is doubtful that hunger strikes by many other Soviet citizens would be so effective, Sakharov's success must rankle party hardliners.

Because liberalization of the academy's current expulsion rules would be a highly effective means of increasing control over individual academy members, the party may press the academy to do so or at least to muzzle ideological nonconformists more effectively. A way of avoiding the expulsion issue was developed by the academy in 1979, when it passed a resolution (by voice vote) that stripped membership status from Soviet emigres; only Sakharov opposed the resolution. One corresponding member, Veniamin Levich, was relieved of his membership after he immigrated to Israel. Another, Sergey Polikanov, who had gone to the West but had not formally announced his intention to remain there, resigned before he could be expelled. The resolution would undoubtedly be used against Sakharov in the unlikely case that he were exiled to the West

Despite the clear desire of the party to stamp out ideological nonconformity in the academy, it has not yet succeeded in doing so. At present, once a scientist has been elected to the academy—as long as he remains in the Soviet Union and the academy's expulsion statutes are not changed—he has a greater ability to avoid serious repercussions for expressing independent political views than any other Soviet citizen.

The Next Academy President

The party is expected to play at least as great a role in the selection of the next academy president as it played in the election of Aleksandrov in 1975. His reelection in 1980 surprised many observers: he was old and ailing, and he had not provided exceptional leadership during his first term. He had apparently retained the confidence, however, of both the party and the general membership of the academy. He may have been a compromise candidate—the one who best fit the criteria that the academy and the party consider when choosing a president. Now nearly 80, Aleksandrov may not survive his current four-year term. In any case, the academy is required by statute to hold another election for president in 1983.

Important Considerations

The academy membership is aware that the Soviet leaders consider the post of president too important a position within the Soviet system to be allowed to become separated from the rest of the government and from the party. Thus, although the president is elected by secret ballot, many academy members probably feel that they can best avoid a confrontation, which would be extremely dangerous to the academy, by electing a president acceptable to the national leaders.

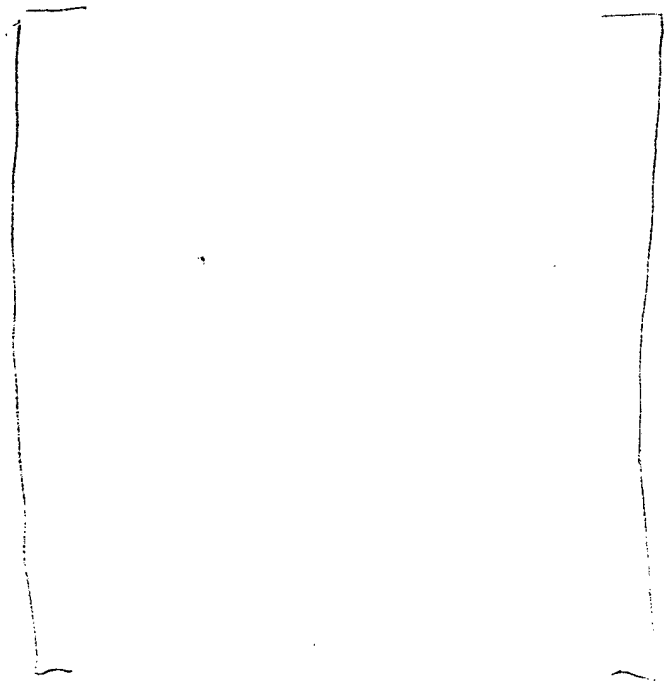
Characteristics of a potential president that both academy members and high-level national officials would probably take into account in evaluating his acceptability include the following:

- His relationship to the party hierarchy.
- His reputation among other academy members.
- His reputation as an applied researcher.
- His scientific specialty. (A social scientist probably could not be elected, and a physicist might have a decided advantage.)

- His international scientific reputation.
- His geographic base. (A candidate from Moscow probably has an advantage over a candidate from outside Moscow.)
- The strength of his base of support, whether it is in the party, the military, industry, or a group of influential academicians.

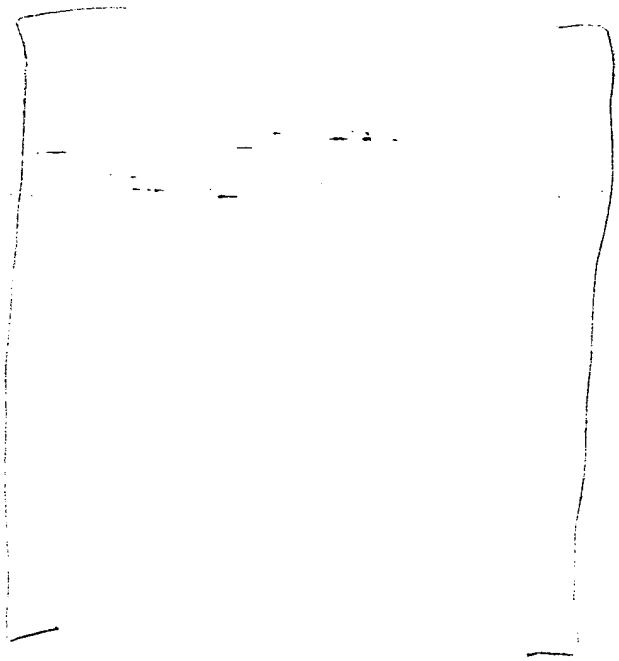
Possible Candidates

The persons mentioned most often as probable successors to Aleksandrov are two young vice presidents of the academy: *Yuriy Ovchinnikov*, a biologist, and *Yevgeniy Velikhov*, a physicist. Both are party members, although Velikhov joined much later in his career (1970).



- Ovchinnikov was elected to the CPSU Central Committee at the 26th Party Congress (1981) and may be the party's prime candidate for the academy presidency.

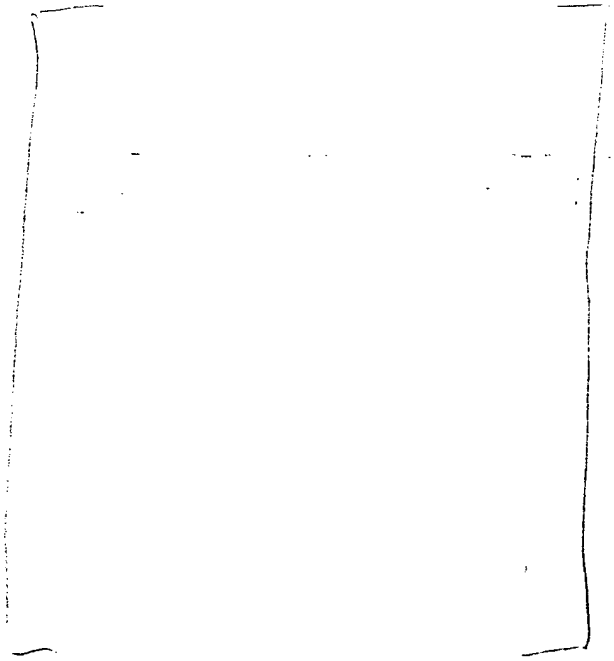
- Velikhov, a protege of Aleksandrov's who is deeply involved in classified weapons-related research, is probably the prime candidate of the Soviet military.



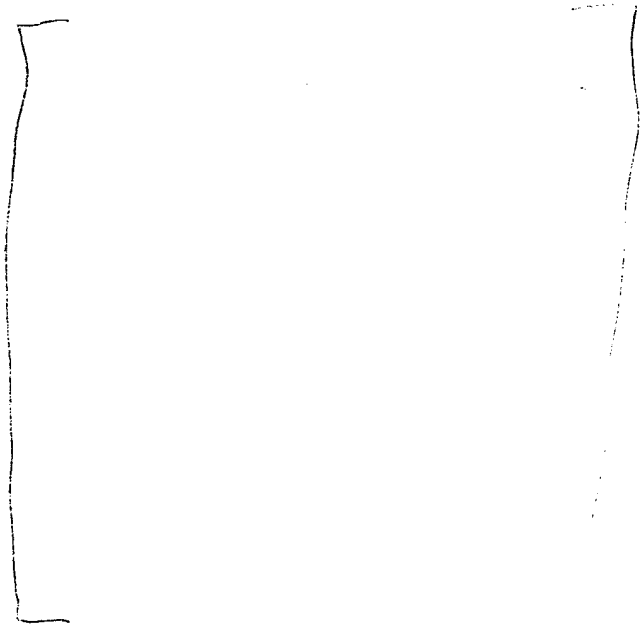
The relative youth of the two men (both are 47) may be a limitation on their candidacies: all but three of the other 263 academicians are older than they. Another limitation may be the rivalry that cannot help but exist between them as two ambitious men seeking the same post; they may have such equal qualifications that they cancel each other out.

A third possible successor is *Boris Paton*, a metallurgist who is president of the Ukrainian Academy of Sciences. Older (62) and more experienced than the two young vice presidents, he also has excellent party credentials: he is a member of both the CPSU and the Ukrainian Communist Party Central Committees. Paton's primary weakness is that, as a Ukrainian, with supporters mainly in Kiev, he is an outsider to the ethnic Russian, Moscow-based academy members, who might not accept him as president.

Given the weaknesses of the three primary candidates for the academy presidency, the way may be open for a compromise candidate. The other vice presidents are long shots; of these, the one with the best chance is probably another physicist, *Anatoliy Logunov*. Although he is not particularly respected for his



scientific work, he possesses impressive administrative credentials (he is rector of Moscow State University). In addition, he is a candidate member of the CPSU Central Committee and a political conformist.



Outlook

Whoever succeeds Aleksandrov will play a leading role in the academy's relationship to the party during his term. Indeed, he will probably reflect the overall relationship of the academy and the party at that time. As the academy and its party-dominated membership attempt to respond to probably increasing demands by the Soviet leadership for scientific answers to national problems, the president will likely find it increasingly difficult to maintain the academy's semi-independent role. The pressures on him may even become so great that he leads the academy in surrendering its independence to the party. The process of moving toward such a diminished academy role would probably be facilitated by the large number of party members in the academy ranks

Should the party prevail, the academy would become merely another arm of state and party policy. The resulting politicization of scientific activity would surely result in an emphasis on applied science rather than basic research. Such an emphasis could in the long run damage Soviet science in several ways:

- By reducing its international prestige.
- By weakening its underlying theoretical framework, thereby reducing the chances for future scientific breakthroughs.
- By encouraging Soviet scientists to promise more than they can deliver—much as Soviet industry does currently—and thereby to lose their credibility with the Soviet leadership.

In general, political expediency would supersede scientific integrity and hinder real scientific advancement.

Implications for the United States

The main significance to US policy of a decline in Soviet science would be the strong probability that the Soviet Union would increase its efforts—both overtly and covertly—to acquire the needed technology from the West. To the Soviets, technology transfer would become the substitute for the results that their

scientists could not provide—more energy, greater agricultural production, and more sophisticated technology.

Despite a Soviet push to increase the flow of technology from the West, the United States and the USSR are unlikely to return to the moderately high level of cooperation that was reached in the 1970s: US scientists would not be eager to participate in cooperative activities with Soviet counterparts whom they judged to be more interested in learning about US technological advancements than in pursuing basic scientific inquiry.

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Appendix A:

CPSU Membership Among Active Members of the USSR Academy of Sciences

Component	Total Members	Percent of Academy Total	CPSU Members	Percent CPSU
Physical, Technical, and Mathematical Sciences Section	118	45	75	64
General Physics and Astronomy Department	35		19	54
Mathematics Department	19		7	37
Mechanics and Control Processes Department	36		31	86
Nuclear Physics Department	15		7	47
Physical and Technical Problems of Power Engineering Department	13		11	85
Chemical, Technical,and Biological Sciences Section	78	29	48	62
Biochemisty, Biophysics, and Chemistry of Physiologically Active Compounds Department	15		5	33
General Biology Department	9		5	56
General and Technical Chemistry Department	25		17	68
Physical Chemistry and Technology of Inorganic Materials Department	21		14	67
Physiology Department	8		7	88
Earth Sciences Section	28	11	20	71
Geology, Geophysics, and Geochemistry Department	20		13	65
Oceanology, Atmospheric Physics, and Geography Department	8		7	88
Social Sciences Section	41	15	36	88
Economics Department	12		12	100
History Department	12		10	83
Language and Literature Department	8		5	63
Philosophy and Law Department	9		9	100
Siberian Department	29		19	66
Far Eastern Scientific Center	4		3	75
Ural Scientific Center	4		2	50
Presidium	37		30	82
Total academy	265		178	67

This table is based on information available as of 23 April 1982.