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TRAITS

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ABSTRACT. This is a tribute to Alexandr D. Alexandrov on the occasion of the centenary of his birth.

Reminiscences and memoirs comprise a special kind of fiction with lies and boasts unavoidable. The latter were disgusting for A.D.¹ to an extent that leaves no room for envying the authors who provide their written recollections about A.D.

It happened so that I had a privilege and honor of constant communication with A.D. from the end of the 1970s up to his death. Writing reminiscences is by far much easier after many years' elapsing. However, my elder friends had managed to convince me to reflect some details of the Siberian period of A.D.'s life.

I have had many opportunities of writing about A.D. in the traditional (and not fully traditional) forms of scientific publicism. I am happy that he never reproached me for this, and so I guess that I may skip the task of surveying his scientific contribution.

Many events in which I observed A.D. and sometimes participated in secondary roles were not so long ago as to become an impartial history. Not all of them deserve inspecting over for revival and plunging into once again.

Perusing my personal archives, I decided to select just a few items reflecting those traits of A.D.'s personality that were revealed in our contacts.

I will be glad if the lessons of A.D.'s life help someone to hold on or to settle some pending crisis as they have readily done for me...

This is an authorized English version of an article in Russian which appeared in *Академик Александр Данилович Александров. Воспоминания. Публикации. Материалы*. Ред.: Г. М. Идлис, О. А. Ладыженская. М.: Наука, 2002.

KUTATELADZE, S.S., TRAITS.

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¹Sounds in Russian like "under" with the letters "n" and "r" omitted and both syllables stressed equally.

ANGER AND SELF-CRITICISM

A particular trait of A.D. I wish to emphasize is the physiological reaction of anger to danger, assault, or offence. These circumstances are well known to bring about the emotion of fear (pale face, cold wet, etc.). The military commanders of the ancient times often enrolled in their forces the warriors whose reaction to danger was anger.

A.D. exhibited the classical examples of the emotion of anger: his face reddened, the chest threw out, and he showed the bared teeth. A.D. understood quite perfectly how he intimidated those who provoked his anger. At that I never saw his unjustified fits of temper. Many years of acquaintance with A.D. cultivated the strong stereotype: Everyone hating A.D. is a potential if not complete scoundrel. As regards his students, friends, and relatives, A.D. was exceptionally kind, even tender, very attentive, and scrupulous.

A man of passion, A.D. always remained self-critical. I had an opportunity to write that self-criticism is a necessary test for intelligence. Every now and then A.D. reconsidered his attitude to people and events in accord with the ideals of morality he proclaimed: universal humanism, responsibility, and scientific outlook.

Providing a small illustration, I can recall that A.D. voted against the admittance of my Kandidat thesis to the formal procedure of public maintenance in 1969. Moreover, he supplied no motivation whatsoever. An open negative vote of an academician happens rarely on such an insignificant occasion as the admittance of somebody's Kandidat thesis. My thesis was submitted in analysis under the title *Related Problems of Geometry and Mathematical Programming*. Its topic was close to the research of A. D. Alexandrov in the theory of mixed volumes and the research of L. V. Kantorovich in optimization and ordered vector spaces. Clearly, I was not the only person impressed by the unmotivated demarche of A.D.

I thought that my article could be of interest to A.D. (the formal review of a "leading mathematical organization" was written by V. A. Zalgaller; and my main technical result was an extension of one unpublished idea by Yu. G. Reshetnyak in measure theory). I was rather nervous making my talk at the public maintenance. Using an overhead projector in a semi-darkened hall, I cast a casual glance towards A.D. When I had told that my thesis uses the theory of mathematical programming by L. V. Kantorovich and the theory of surface area measures by A. D. Alexandrov, there was some noise from the side benches: A.D. rose and strode out. It is easy to imagine how confused I was after that. However, the vote was unanimous.

After many years, when we had been close with A.D. for a long time, I reminded him of this story. He rebuffed immediately: "This never happened at all." (You should know A.D. to understand his answer properly: when he forgot or doubted something, he always said: "Don't remember." Replying in other words, A.D. had declared the whole episode nil and void.)

It is a pleasure to recall that I had received satisfaction from A.D. in due course. In result of some bizarre machinations of the Higher Attestation Committee of the USSR in the 1970s, my Doctor thesis was sent to extra referral despite its formal approval at the corresponding section of the Committee on the recommendation by E. M. Nikishin. Happily, it was A.D. who was appointed a "black" opponent (which is a Russian equivalent of a "blind" reviewer), and I received his appraisal for the isoperimetric problems with arbitrary constraints on mixed volumes.

M. A. LAVRENT'EV AND A BOOK ON THE METHODOLOGY OF MATHEMATICS

Narrating about his participation in the ideological battles of the 1940s and 1950s, A.D. always spoke about the tactics of preemptive blows. One of them deserves recalling.

The Academy of Sciences of the USSR had printed in 1953 a huge volume of about thousand pages under the title: *Mathematics: Its Content, Methods and Meaning*. The Editorial Board of the volume comprised A. D. Alexandrov, A. N. Kolmogorov, and M. A. Lavrent'ev.

The eighteen chapters of the book were intended to the general public and written by thirteen authors. The list of the latter contained I. M. Gelfand, M. V. Keldysh, M. A. Lavrent'ev, A. I. Malcev, S. M. Nikol'skiĭ, I. G. Petrovskiĭ, and S. L. Sobolev. The run of 350 copies was exceptionally small those days. Besides, each copy was enumerated and the front page contained the index of the copy and the extraordinary signature stamp "Published for Discussion."

Sufficiently many copies of this book were printed free of classification only in 1956, and the book became an issue in the world mathematical literature. Suffice it to say that the translation of this book was reprinted thrice in the USA (the last time in 1999).

Clearly, such an extraordinary collection had rather nontrivial reasons for its compilation. The aim of this project consisted in defending mathematics from the antiscientific attacks that were typical of those days in the Soviet Union.

To strike a severe preemptive blow on the pseudo-scientists of Marxism which try to harass the development of science in this country and to get rid of them possibly for ever was an almost successful plot of the book. Avoiding strictly professional nuances, the world-renowned leaders of mathematics gave in this book a detailed and thorough analysis of such fundamental general aspects of their science as the subject of mathematics and the nature of mathematical abstractions, interaction between pure and applied mathematics, relationship between mathematical research and practice, etc. The book remains to stand as one of the heights of the methodology of mathematics.

The soul of this project was A.D. In addition to the two special chapters on curves and surfaces and on abstract spaces, he made a "promising beginning" — wrote the lengthy introductory chapter "A General View of Mathematics" with an impressive analysis of the challenging philosophical problems of mathematics.

The work on this book drove A.D. and M. A. Lavrent'ev closer. By the invitation of M. A. Lavrent'ev, A. D. Alexandrov joined the staff of the Siberian Division of the Academy of Sciences of the USSR in 1964. A.D. was proud of the fact that M. A. Lavrent'ev had solely nominated him as a candidate to a full member of the Academy and freed him from all bureaucratic formalities. When A.D. became aware that L. V. Kantorovich was nominated for the same vacancy, he began to refuse to participate in the elections. However, M. A. managed to convince A.D. to stop refusing. Sage Mikhail Alekseevich turned out to be right: Both were happily elected (the Bylaws of the Academy made room for such an outcome those days).

BERTRAND RUSSELL AND A PREVENTIVE WAR AGAINST RUSSIA

At the end of the 1970s the plan was under discussion of publishing a volume of the articles of A.D. on the general issues of science and other articles of publicism. This plan led finally to his book *Problems of Science and a Scientist's Standpoint*.

The release candidate No. 1 was surely the article “A General View of Mathematics.” A.D. asked me to look it through for shortening. Reading the article thoroughly, I felt much doubt about the following excerpt omitted from all publications after 1952:

In the bourgeois society we can encounter the scientists that turn into obscurantists professing political reaction and antiscientific obfuscation rather than progress and knowledge. An example of this degeneration is one of the founders of the so-called “logical positivism”—Russell, an English philosopher and mathematician. He declared fifty years ago that “Mathematics may be defined as the subject where we never know what we are talking about, nor whether what we are saying is true.” In other words, mathematics has no real content according to Russell. The real content of his own views Russell revealed completely when he began to call for an atomic war against the Soviet Union several years ago. A perverter of science and self-conceited epigone of forlorn idealistic systems who instigates mass destruction—that is the true face of this “logical positivist.”

In my opinion of those days Russell was one of the leaders of the Pugwash movement, a dedicated peace warrior, and a Nobel prize winner. In no way he was reminiscent of a perverter of science who instigates mass destruction. Frankly speaking, I thought that A. D. swallowed a tasty bait of the propagandists of the CPSU in the first years of the Cold War.

With a hardly concealed spite and glee I told A.D. that the reader needs a precise reference to the words of Russell and smugly requested his explanations. In fact, I attacked him impudently in the trite style of the “presumption of dishonesty.” He was definitely offended. He snapped back sharply that the episode did take place but he could not remember any details. I must confess that these explanations convinced me of nothing at all.

In the new millennium I tried to use the omnipotence of the Internet to settle the problem finally by search machines. Without any effort, I found out that one of Russell’s statements about the A-bomb appears in textbooks as a standard example of a “false dilemma.”

Either we must have war against Russia before she has the atom bomb, or we will have to lie down and let them govern us.

Also, Russell included in his book *The Future of Science, and Self-Portrait of the Author* as of 1959 his interview for BBC Radio:

Q. Is it true or untrue that in recent years you advocated that a preventive war might be made against communism, against Soviet Russia?

RUSSELL: It’s entirely true, and I don’t repent of it now. It was not inconsistent with what I think now.... There was a time, just after the last war, when the Americans had a monopoly of nuclear weapons and offered to internationalize nuclear weapons by the Baruch proposal, and I thought this an extremely generous proposal on their part, one which it would be very desirable that the world should accept; not that I advocated a nuclear war, but I did think that great pressure should be put upon Russia to accept the Baruch proposal, and I did think that if they continued to refuse it it might be necessary actually to go to war. At that time nuclear weapons existed only on one side, and therefore the odds were the Russians would have given way. I thought they would

Q. Suppose they hadn’t given way.

RUSSELL: I thought and hoped that the Russians would give way, but of course you can't threaten unless you're prepared to have your bluff called.

It is a pity that A.D. will never hear the words of my repentance.

A. P. ALEKSANDROV AND A POLEMIC ABOUT AN ARTICLE BY N. P. DUBININ

A.D. was engaged in defense of science and particular scientists in his Siberian period as well. Many persons he drew out of the screw presses of the scientific and would-be-scientific rascals who made their careers in the 1970s and 1980s. I am reluctant to tell these stories whose analogs are familiar to the majority of scientific groups in this country.

What I want to recall here is the valiant standpoint of A.D. in regard to the article by N. P. Dubinin "Biological and Social Heredity" which was published in *The Communist* (1980:11).²

A.D. had appraised this composition as an "outstanding piece of antiscientific literature." I am convinced that to read the article by N. P. Dubinin and the relevant controversy is as vital for a young scientist of any specialty as the perusing of the shorthand record of the notorious August Session of the Lenin All-Union Academy of Agricultural Sciences (VASKhNIL in the Russian abbreviation) which took place in 1948.

Avoiding to narrate the whole composition of N. P. Dubinin, I just pinpoint one of the ideological conclusions of his article:

Without clear understanding of the genuine scientific basis for the problem of man, it is impossible to properly place the vicious essence of neoeugenical ideas in a disguise of new discoveries in natural sciences and in particular in molecular biology and genetics. Moreover, this problem is such that the coincidence of the truth criterion and the party spirit is most conspicuous here.

A.D. found primarily repulsive the attempt at making the party spirit the test for truth and refused to consider it as a slip of the tongue. His worst premonitions came true: the editorial comment on the discussion around the article by N. P. Dubinin read later in *The Communist* (1983:14):

The main criterion for evaluating the philosophical meaning of pieces of theoretical research is their ideological orientation, the purity of the class-characteristic, ideological, and methodological standpoints.

Practice as the ultimate test for truth was doomed for a pompous funeral and complete oblivion.

A.D. tried to profess his views of the article by N. P. Dubinin actively: he made talks on methodological seminars in various scientific institutions and attempted in vain to publish his arguments. Fortunately (this happened quite rarely to A.D.), he was supported by A. P. Aleksandrov who then held the position of the President of the Academy of Sciences of the USSR and let A.D. get the floor at the General Assembly of the Academy of Sciences of the USSR on November 21, 1980 (a version of the speech of A.D. and the reply by N. P. Dubinin are published in the *Herald of the Academy of Sciences of the USSR* (1981:6)).

²The official journal of the Central Committee of the Communist Party of the USSR. The latter will be the "Party" in what follows.

A.D. always emphasized that the cause of science is to find out “how the thingummy’s actually going on.” He pursued the same approach in this particular case:

The real problem consists in studying which sides of psyche depend on heredity or social environment and to which extend. However, N. P. Dubinin closes this problem as regards normal persons, leaving it open only for medical genetics in regard to abnormal persons.

A.D. told me after the Assembly that Anatoliĭ Petrovich answered to A.D.’s application for having the floor as follows: “Do you want to bite off Dubinin’s head right away or after the break?” As far as I could remember, A.D. was eager to accomplish the task immediately... These days A.D. gave me a galley proof of the draft of his speech. Below I present the end of this manuscript which remained unpublished for a couple of decades:³

I have said now what I wished to say, but I harbor heavy doubts: maybe, it was unnecessary to speak all this out and in so strong words at that. In fact, it is clear that the attempts of Academician Dubinin will not affect serious scientists and practitioners. Therefore, they will hardly influence our biology and medicine.

However, this view is not fully accurate. Academician Dubinin used a high rostrum and it is not completely excluded that some assistant professor reading human genetics in some medical college will be called to responsibility for “attempting”—in the words of Dubinin—“to revise and waste the marxist teaching of the unique social nature of man.”

Furthermore, the question is placed on the agenda of the honor of science and our personal honor: Do we agree to yield to the resurrection of the vicious style and battle against science which reigned here about thirty years ago?

Everyone can make a mistake and even speak up in rigmarole. What really matters in the long run are the basic principles of science themselves rather than some particular mistakes. Marx observed that anyone I call a base person who strives to adjust science to external and alien aims—irrespective of whatever delusions science might cling to.

The objects of concern are precisely the main principles of scientific research: impartiality and honesty. We cannot let them be dismissed so loudly and impudently.

S. L. SOBOLEV AND A POLEMIC ABOUT AN ARTICLE BY L. S. PONTRYAGIN

The year 1980 was rich in events!

The journal *The Communist* (September 1980:14) published the article by L. S. Pontryagin “About Mathematics and the Quality of Teaching Mathematics.” This composition still arouses the emotions as sharp as those stirred up by the article of N. P. Dubinin. Moreover, both in the same volume of the journal produce an unforgettable adore.

The article by L. S. Pontryagin was supplied with a routine editorial comment that explained the genuine meaning of the article to those who failed or hoped to fail to grasp it:

...the author is right in opposing vehemently not only the exceeding devotion to abstract constructions in teaching mathematics and in mathematics itself but also the pseudoscientific speculations related to the false treatment of its subject.

³See A. D. Alexandrov *Articles of Various Years*. Novosibirsk: Nauka, 2008, 491–495.

Noncritical adoption of foreign achievements in relatively new branches of mathematics and hypertrophy of general importance of these achievements to science as a whole have led to overrating the results of many mathematical studies and in some cases to the idealistic treatment of the essence of the subject of this science, to the absolutization of abstract constructions, and to the belittling of the gnosiological role of practice. Exceeding devotion to abstractions of the set-theoretic stance has started disorienting the creative interests of students and academic youth.

It was impossible to consider such a rhetoric casual and innocent. Indeed, *The Communist* **18** had published a note by Academician I. M. Vinogradov, Director of the Steklov Mathematical Institute of the Academy of Sciences of the USSR. This note said in particular that

*The Scientific Council of the Steklov Institute is satisfied with the statement of the journal *The Communist* in the form of the article by Academician L. S. Pontryagin... The Scientific Council of the Steklov Institute supports the statement of the journal *The Communist* and believes that it will serve the cause of improvement of teaching in secondary school...*

I find it appropriate to cite a few lines from my diary for reconstructing the intensive but stale atmosphere of that span of time.

- 14.10. A.D. called me in the evening and told about an article in *The Communist* **14**: Pontryagin vs. secondary school, S. L. [Sobolev] + L. V. [Kantorovich] + an editorial comment on idealism in mathematics.
- 15.10. M. A. Lavrent'ev passed away.
- 18.10. I read the nasty article by Pontryagin in the morning and dropped in on A.D. in the evening to talk this over.
- 24.10. The ninth day—the funeral of Mikhail Alekseevich [Lavrent'ev]...
- 25.10. Zelmanov was flunked by secret ballot in the Institute. We discussed this and *The Communist* with A.D. at length.
- 26.10. A.D. dropped in on me and gave me the second part of his textbook. Then I dropped in on him. A.D. wants to retire.
- 30.10. ...G. P. [Akilov] crashed his car but slightly. A.D. told me that S. L. has written a reply to *The Communist*. Yu. F. [Borisov] called me about extreme points.
- 3.11. At V. L. [Makarov]'s seminar in the morning. Then I visited S. L.—about *The Communist*. He showed me his reply. Next—at S. L.'s seminar with a Vietnamese. Then another conversation with S. L. about the article (in the breaks I talked to A.D.). S. L. spoke eloquently but slightly incoherently about sets and cardinality.
- 4.11. S. L. called me about arranging a meeting of the Scientific Council [of the Institute of Mathematics] vs. Pontryagin.
- 5.11. [The Scientific Council] unanimously condemned the Thesis Maintenance Council. The speakers were Serebryakov, Yu. G. [Reshetnyak], A.D., et al....
- 10.11. The whole day was full of discussions with S. L. and A.D. about Pontryagin and also about Reshetnyak and Zelenyak (in view of a scandalous meeting of the Academic Council to take place tomorrow [in NSU]).
- 11.11. An anniversary of Bourbaki. Yu. G.'s department in NSU] was reduced by 40% ...

- 12.11. A seminar with A.D. about Lenin's speech at the III Convent + vs. Pontryagin... Yu. G. discussed L_p with me.
- 24.11. I looked for the list of the members of the Scientific Council with L. M. [Krapchan]. A.D. has arrived—he spoke against Dubinin at the General Assembly. Dubinin replied... A seminar about attractors with Ustinov (from Obninsk).
- 28.11. [The Scientific Council] unanimously supported the appeal by Zelmanov. Celebration of the 20 years of the M[at]hematical-E[conomical]D[epartment].
- 3.12. I dropped in on S. L. about the resolution. He told that he will move it himself.
- 8.12. I dropped in on S. L. with A.D., V. A. [Toponogov], and V. V. [Ivanov]. Discussion vs. Pontryagin.
- 12.12. [We were] pretty close to adoption of the anti-Pontryagin resolution [at the philosophical-methodological seminar]. I dropped in on A.D. in the evening to talk this over.
- 15.12. I discussed the resolution with S. L. Then at his seminar... Bokut' called me in a break about his troubles. Shirshov recommended Ershov for the party membership...
- 23.12. Talking everything over the whole day out with Tikhomirov who just arrived. Mainly in the anti-Pontryagin mood.
- 24.12. Theses' maintenance: [V. N.] Dyatlov (yea 18 nay 0 abstained 0) and [G. G.] Magaril-[Il'yaev] (yea 17 nay 0 abstained 0)... Everything was pretty nice... Booze & noise at Dyatlovs'...
- 25.12. Short discussion with A.D. in the morning... [The Scientific Council] adopted the anti-Pontryagin text + there will be a letter to *The Communist* to be prepared by A.D. + Yu. L. [Ershov] + [S. I.] Fadeev!

Such were the circumstances we lived in those days.

I remember the extraordinary stamina of A.D. (which was predictable) and Sergeĭ L'vovich (which was unexpected for me). The latter startled me on November 3, giving his reply to *The Communist*: "I am interested in your opinion but you should bear in mind that I have already mailed my reply." On the same occasion he showed me a copy of an analogous letter to somebody in the leadership of the Central Committee of the CPSU (seemingly, this was M. V. Zimyanin).

Many participants of these events are still alive. Some of them have changed for the better (and the rest of them still have a good chance to do the same). That is why I am reluctant to describe all details of the vehement struggle for a noble answer to the article by L. S. Pontryagin. I mention only that the crucial ingredient was the titanic joint efforts of Aleksandr Danilovich and Sergeĭ L'vovich.

In result, the Scientific Council of the Institute of Mathematics unanimously (sic!) adopted at its meeting on December 25, 1980 the resolution that read in particular as follows:

The Scientific Council announces its disagreement with those who informed the Editorial Board of The Communist about the situation in the science of mathematics which gave grounds for the editorial comment on the article by L. S. Pontryagin to make accusations of the noncritical adoption of foreign achievements, formalistic craze, disorientation of academic youth, and the false treatment of the subject of mathematics. Mathematics is an indivisible whole

and deterioration of its more abstract fundamental part resembles proscription of chromosome heredity theory, treatment of cybernetics as a “science of obscurantists,” and prohibition of using mathematical methods in economics on the basis of false pseudoscientific arguments. Mathematics is a very serious matter of paramount importance for the development of our society. Therefore, treating it and judging it requires great responsibility.

There was some cool in the relations of A.D. and S. L. that year (but I am disinclined to reveal the reasons behind this yet). Therefore, it happened so that the drafts of the resolutions were prepared with me acting as an intermediary. I keep these drafts with the scars of those “shuttle operations” in remembrance of the unforgettable material lesson of struggling for scientific truth.

It is worth observing that E. I. Zelmanov whose Kandidat thesis was rejected by secret vote as mentioned above acquired the Fields Medal a few years later.

The standpoint of Sergeĭ L’vovich was reflected by *The Communist* in the phrase: “Comments are still coming. Among them some are written in a polemic style: the letters by Academician S. L. Sobolev, Assistant Professor P. V. Stratilatov, and Professor Yu. A. Petrov.” The chant “Academician Sobolev, Assistant Professor Stratilatov, and Professor Petrov” was our catch-phrase for a few years.

We attempted to print a booklet with the resolution of the Scientific Council and a detailed version of the report by A. D. Alexandrov “About the Article by L. S. Pontryagin in *The Communist* (1980:14).” Our attempts were unsuccessful—we were opposed by V. A. Koptjug.⁴

A.D. showed me a personal memo by V. A. Koptjug in which the latter—a censor (sic!)—reproached A.D. for a “persecutor’s tone” and refused to publish the report.

Despite this the scientific community became aware of the standpoint of Siberian mathematicians: at Sobolev’s request the copies of the resolution and A.D.’s report were sent to the principal mathematical institutions of this country.

Something similar happened later to A.D.’s book *Problems of Science and a Scientist’s Standpoint* whose publication was procrastinated by the chiefs of the Siberian Division and became possible only after interference of P. N. Fedoseev who knew A.D. rather well and strictly obeyed academic etiquette in this matter.

SIC TRANSIT...

OR HEROES, VILLAINS, AND RIGHTS OF MEMORY

April 25, 2003 is the date of the centenary of the birth of Andreĭ Nikolaevich Kolmogorov. The personality and creative contribution of this genius man to the world science and Russian culture are so eminent that the tiniest bits of recollections of anything related to him might be of avail to those pondering over life and its principles.

For many years I have heard requests of my friends and colleagues to present for the public my whatever partial overview of the circumstances and events invoked by Merzlyakov’s article “The Right of Memory” and in particular the polemic between A. D. Alexandrov and L. S. Pontryagin this article had stirred up. The story to tell is rather ugly and to plunge into it again, reviving the bygones, brings about much discontent and displeasure.

⁴The Chairman of the Siberian Division of the Academy of Sciences from 1980 to 1997.

Unfortunately, the historical nihilism of these days intertwines rather tightly with nihilism in morality. “The past crimes are buried in the past. The past is absent at present. Therefore, the past crimes are absent now. So, let bygones be bygones.” This sophism brings about the opinion that nobody could recall and take into account the crimes of the past in view of the period of limitations. This is correct but partly. The murderer remains a murderer for ever irrespective of whether or not he committed a negligent homicide and was relieved from persecution or has served his punishment and lives with no record of conviction. The thief is still a thief although she returned back the things she had pilfered and was relieved from punishment. No fact of assassination or theft is ever destroyed by whatever decisions about it. No error disappears unless it has been repaired. Always evil is to forget the past and its lessons... These arguments drove me to the decision of narrating about this gloomy episode of the past.

Merzlyakov’s article appeared on February 17, 1983 in the newspaper *Science in Siberia* of the Presidium of the Siberian Division of the Academy of Sciences of the USSR. Yu. I. Merzlyakov (1940–1995), an established algebraist, with the titles of Doctor of Sciences and Professor, had a bit of reputation in the theory of rational groups. He was not an ordinary personality devoid of literary and other gifts and so won quite a few admirers. His article served many years as a credo of the Novosibirsk branch of the notorious “Memory” society, an informal nationalistic group sprang to life in the early years of Gorbi’s perestroika.

To grasp the undercurrents of Merzlyakov’s article completely is practically impossible for anyone far from the Russian mathematical life of those days. Moreover, the understanding of and attitude to this text varied drastically from capitals to province. Despite this, all Russian mathematicians clearly saw the implication of the following excerpt of Merzlyakov’s article:

*Academician Lev Semënovich Pontryagin is a brilliant exemplar of a scientist and patriot of these days. The International Astronautical Federation elected him an honorary member side by side with the cosmonauts Gagarin and Tereshkova for his outstanding scientific contributions. Skipping any description of all aspects of the versatile activities of L. S. Pontryagin,⁵ I will dwell upon a single problem of a national-wide scale, the teaching of mathematics in secondary school. It was exactly L. S. Pontryagin who vehemently pointed out, in particular on the pages of *The Communist*,⁶ the evil implications of the sharp turn to the course of the extreme formalization of mathematics which was imposed on our schools in 1967 and oriented consciously or unconsciously to the accelerated intellectual development (with an equally fast achievement of the utmost limits of creativity) nontypical of the majority of the country’s population. The flood of responses to the statement by L. S. Pontryagin⁷ has demonstrated that his criticism was quite timely and fair. In particular, Vice-President of the Academy of Sciences of the USSR Academician A. A. Logunov ascertained on the session of the Supreme Soviet of the USSR in*

⁵The initials seem abundant to the English eye but they reflect the style of the Russian polemics in which the presence of initials brings about some extra respect to the persons in question whereas the absence of initials clearly demonstrates slight indifference, disrespect, or even neglect. Every Russian professor knows that the initials of Gagarin are Yu. A., and the initials of Tereshkova are V. V. To keep the flavor of the polemic I preserve the authors’ rules for placing initials in the Russian originals throughout.

⁶*The Communist*, 1980:14, p. 99–112.

⁷*The Communist*, 1980:18, p. 119–121; 1982:2, p. 125–126.

October 1980 that there is a grievous situation about the teaching of mathematics in secondary school and to learn mathematics from the present-day textbooks “can destroy any interest in not only mathematics but also exact sciences in general.” (I remark parenthetically that the leader of the reform received the prize of 100,000 dollar in 1980 from the state with which the USSR had severed all diplomatic relations exactly in the year of the beginning of the reform.)⁸

The rest of the article was mainly inspired by the outright scandalous situation in the midst of logicians and algebraists of Novosibirsk and in the whole mathematical community of Siberia either. The point was that the retirement of S. L. Sobolev was pending from the position of the director of the Institute of Mathematics of the Siberian Division of the Academy of Sciences of the USSR. This evoked the battles for power and better places under the sun which were typical of the academic community of those days.

I am disinclined to dwell upon the other details of Merzlyakov’s article since I fully agree with the estimate of Sobolev who expressed his attitude to the hysterics by Merzlyakov as follows: “The role of Savonarola befits no twentieth-century scientist.”

Sobolev forwarded his sagacious and valiant letter from Moscow to the management of the Institute on March 9. He rejected the slander against Kolmogorov and justly gave a negative estimation of the whole article. I had an opportunity to read this hand-written page of a copy-book which unfortunately was unwelcome by some of the addressees, concealed for a long time, and made public by S. K. Godunov only after fierce battles and conflicts at the meeting of the Scientific Council of the Institute on April 18. The principled and uncompromising position of Sobolev seemed to the many less important than the opinion of local Party leadership. A few iterations under the pressure of petty Party bonzes brought about the official position of the management of the Institute which recalled the merits of Kolmogorov while observing that Merzlyakov appropriately posed the problems of patriotism.

Patriotism and slander... A notorious mixture...

Some unpleasant general thoughts are in order now about professionalism and mathematicians. Professionalism requires absolute devotion to profession and, absorbing personality, tends to impoverish the latter. Professionalism appears amidst mathematicians rather early whereas the upbringing of necessary moral qualities is often far from a fast and easy matter (mathematicians are next of kin to sportsmen in this respect). Of little secret are the elements of gossip, jealousy, and envy encountered the world over even among the first mathematicians. Hatred to the gifts of the others is often mixed or replaced with xenophobia, racism, antisemitism, and similar elements of the same sort. These phenomena are still far from rare nowadays. The oversensitive reaction to the slightest traits of the presence or absence of antisemitism was and still is a litmus test of “friend-enemy” in Russia irrespective of whether this is right or wrong. I believe that to grasp correctly the tension of the events after Merzlyakov’s article is impossible without the clear understanding of the above circumstances of the Russian life.

By the way, somebody told me that the then editor-in-chief of the newspaper *Science in Siberia* tried to justify himself on explaining that he had slightly deviated from the standard routine of accepting materials for publication in order to insert

⁸*Notices of the AMS* (1981) **28**:1, p. 84.

Merzlyakov's article in the issue on the Day of the Soviet Army because he viewed it as exceptionally patriotic. In our midst we have called these views "slandering patriotism" since then. Mixing love for the Fatherland with slander is always characteristic of "the last resort of a scoundrel."

The Moscow mathematical community reacted to Merzlyakov's article immediately and adequately in general. The understanding prevailed that the lampoon could strike the health of Kolmogorov which was already shaken seriously. Surely, nobody showed the newspaper to Andreï Nikolaevich but his 80th anniversary approached rapidly and Merzlyakov's article could provoke some undesirable predicaments: for instance, there might have been no ceremonial decoration from the government which could be noticed by Kolmogorov, stirred up his analytical interest and investigation with possibly unfavorable aftereffects to his health.

Another circumstance helped to the spreading of a noble reaction: The article appeared on the eve of the General Assembly of the Academy of Sciences of the USSR in Moscow where several copies of the issue of the newspaper were delivered immediately. The exceptionally sharp reaction against slander and political snitching was revealed by the leading mathematicians: A. D. Alexandrov, S. M. Nikol'skiĭ, S. P. Novikov, Yu. V. Prokhorov, S. L. Sobolev, L. D. Faddeev, and many others.

Already on March 14 there appeared the first written response by Alexandrov with an analysis of Merzlyakov's article. Characterizing the article as objectively anti-Soviet and subjectively base, Alexandrov demonstrated the necessity of terminating all instances of slander and political insinuation. Closing his response, Alexandrov wrote:

Yu. Merzlyakov himself has clearly deserved the right of memory. Since at least some of his statements are so evil and monstrous that might go down in history...

We have thus seen that Merzlyakov's article is an objectively anti-Soviet, subjectively base, rude, and antipatriotic composition, its every appeal to patriotism notwithstanding.

Let us abstain from judging the author severely but rather pity him since we observe an indubitable pathological case. Only a perverted mind and turbid imagination can bring about such a flood of insolence and mud! Renegades, domestic emigrants, immature moral viewpoints halfway from amoeba to cave-dweller, a shitting bull, a beast, a toady-like mediocrity of a petty shop-keeper and, to crown all these, the monstrous image of villains that crawl to loot the wounded as description of the "horde" of scientific workers and, in particular, his fellow colleagues. Well, that is the limit: an obvious pathology.

We are to pay tribute to the Mathematics Division of the Academy of Sciences of the USSR and personally to Yu. V. Prokhorov who was an initiator and editor of the following Resolution of the Bureau of the Mathematics Division as of March 25, 1983:

Academician Yu. V. Prokhorov informed the body about a recent article in the weekly newspaper Science in Siberia of the Presidium of the SDAS⁹ of the USSR (No. 7 of February 17, 1983) by Yu. I. Merzlyakov, Sc.D. on the staff of the Institute of Mathematics of the SDAS of the USSR. This article contains a uniquely

⁹The abbreviation of "Siberian Division of the Academy of Sciences."

decipherable insinuation against Academician A. N. Kolmogorov, an outstanding Soviet scientist.

The floor for discussion was taken by Academicians S. M. Nikol'skiĭ, V. S. Vladimirov, S. P. Novikov, A. A. Samarskiĭ, S. L. Sobolev, and L. D. Faddeev; Corresponding Members of the Academy of Sciences of the USSR A. V. Bitsadze, I. M. Gelfand, A. A. Gonchar, and S. V. Yablonskiĭ. All of them unanimously condemned the indecent insinuations of Merzlyakov's article and qualified them as slander against one outstanding scientist and patriot. It was also observed that the article contains insinuations against a number of other Soviet mathematicians.

The Bureau of the Mathematics Division of the Academy of Sciences of the USSR HAS DECIDED

- 1: to observe that the article of Sc.D. Yu. I. Merzlyakov "The Right of Memory" in the newspaper *Science in Siberia* of the Presidium of the SDAS of the USSR contains slander against one outstanding scientist/mathematician and Soviet patriot; to observe that the article contains a number of indecent attacking allusions to other Soviet mathematicians.
 - 2: to call upon the Presidium of the Siberian Division of the Academy of Sciences of the USSR to take due measures pertinent to Item 1.
- The Resolution of the Bureau of the Mathematics Division of the Academy of Sciences of the USSR was adopted by a unanimous vote.

The bushes of provincialism were already full-fruited in Siberia those days, and the solicitude for the honor, dignity, and health of Kolmogorov together with counteraction against the filthy things like antisemitism seemed to the chosen few to be negligible as compared with the prevailing sentiments for their own career, success, fame, and prosperity. The following story of Alexandrov looks like a joke nowadays: one of the top bosses of the Siberian Division responded to the protest and indignation against Merzlyakov's article with the sincere question: "Who is that Kolmogorov guy?" One can easily imagine our reaction...

On March 28 there was a meeting of the Presidium of the SDAS of the USSR. The official letter of the Institute, bearing the signatures of the three deputy directors and the party secretary, was announced together with the second milder letter of Sobolev who was in Moscow. The "Savonarola" letter was never mentioned. Unfortunately, the official copy of the Resolution of the Bureau of the Mathematics Division did not arrive at Novosibirsk (the time of facsimile communication had not come yet). Alexandrov briefed the audience about this Resolution. However, not without reason it is said: "you're nobody till somebody gives you a sheet of paper." V. A. Koptug, never feeling anything positive towards Alexandrov, moderated the discussion with reference to the unclear standpoint of the Institute of Mathematics and the absence of the Moscow Resolution in writing. Of no avail were the vehement statements of members of the Presidium Academicians G. K. Boreskov, S. S. Kutateladze (1914–1986), and A. N. Skrinskiĭ who condemned the slander against Kolmogorov and insisted on a principled reaction. In result there was adopted a rather insipid resolution which stated that the editorial staff of the newspaper made a serious mistake by publication of Merzlyakov's article "written in the style inadequate to the spirit and aims of the newspaper." That was how slander had become a style in the opinion of a part of the then leadership of the Siberian Division.

The efforts of the supporters of Kolmogorov brought about a tactical success: the Decree of the Presidium of the Supreme Soviet of the USSR was signed on April 22 upon the decoration of Academician A. N. Kolmogorov with the Order of the October Revolution for his great contributions to the development of the science of mathematics and the long-term and fruitful pedagogical activities on the occasion of the 80 years of his birth. It seems to me that Kolmogorov had never become aware of Merzlyakov's article.

Of great importance to Novosibirsk was the publication in the issue of May 12 of the newspaper *Science in Siberia* of an article about Kolmogorov which was written by S. L. Sobolev, A. A. Borovkov, and V. V. Yurinsky. Their article ranked Kolmogorov as one of the most eminent mathematicians on the twentieth century, an outstanding teacher, an ardent patriot, and the founder of his scientific school of a worldwide reputation and few analogs in the history of science. The authors particularly emphasized the undisputable influence of Kolmogorov on the development of mathematics in Siberia.

This did not close the case however. "The Special Opinion of L. S. Pontryagin" was made public already on April 30. In this article Pontryagin expressed his disagreement with the Resolution of the Bureau of the Mathematics Division (he was a member of the Bureau but missed the meeting on March 25 since he was ill). He refuted the accusation against Merzlyakov of slandering Kolmogorov and estimated the article "generally in the positive since it summons up citizenship which is in great demand of our scientists."

In particular, Pontryagin wrote:

I ascertain that the statement of Yu. I. Merzlyakov about Kolmogorov, even in deciphered form, cannot be viewed as slander. It does not ascertain any causal relation between the failure of the reform and the awarding of the prize. But the thought about a causal relation can be borne in upon the reader.

It was after this meeting already that I received some responses to the Yu. I. Merzlyakov article. One of them showed disapproval (by Academician A. D. Alexandrov) and three of them showed approval (by Academician/writer Leonov; Mathematician, ScD V. D. Mazurov; and the chiefs of the Mechanics and Mathematics Department of NSU:¹⁰ Dean M. M. Lavrent'ev and Secretary of the Party Bureau D. E. Zakharov).

"The Special Opinion" pinpointed a few rare facts of public subscription to soiling Kolmogorov's reputation. Pontryagin's text full of the bits of an open polemic with Alexandrov raised the question: "Whom does A. D. Alexandrov defend so vehemently in his response?". There was little doubt that Alexandrov would leave this question rhetorical.

Alexandrov finished his response to Pontryagin on May 28. Confirming his view of Merzlyakov's article as politically slanderous insinuation, Alexandrov wrote:

In my response to Merzlyakov's article I characterized this as baseness and I reiterate: this is baseness, and the meanest baseness at that.

Academician Pontryagin is not a young man and he knows the intended consequences of such baseness in the times of the year 1937. He could know in particular that Nikolaï Nikolaevich Vavilov, a great Russian scientist/biologist, died in prison since someone casted a political slanderous innuendo about him. Now

¹⁰The abbreviation of Novosibirsk State University.

*Academician Pontryagin supports the revival of political slanders and insinuations and even discerns some “citizenship” in them. However they were condemned by our party and people long ago. It is the Bureau of the Mathematics Division that revealed the genuine citizenship by repulsing Merzlyakov’s slander. The “citizenship” in the sense of Pontryagin was revealed already in his article in *The Communist* where he spread slander against our mathematics. Now it is revealed once again in his “Special Opinion” supporting baseness and slander against not only A. N. Kolmogorov but also the whole school of our scientists which supposedly incorporates a crawling horde of the most monstrous careerists and villains...*

The copies of the March Resolutions of the Bureau of the Mathematics Division and the Presidium of the SDAS of the USSR were displayed on the advertisement board of the Institute of Mathematics of the SDAS of the USSR from July 2 to July 7. So ended the crisis of “patriotically slanderous citizenship” at Novosibirsk in 1983.

The above events in the history of science in Russia may be compared only with the so-called “Case of Academician N. N. Luzin.” The pivotal distinction of the year 1986 from the year 1936 lies in the fact that the personality of Kolmogorov had morally united the overwhelming majority of the Russian mathematicians who shielded their professional community from slander and political insinuation.

Sic transit separation.

SCIENCE AT THE CENTER OF CULTURE

A.D. was a person with a universal outlook. Through much suffering he did achieve a perfect system of views that allowed him to analyze the general philosophical problems and meet the challenges of contemporary life.

I had many opportunities to attend his public lectures which always evoked a vivid response of any audience. I recall his brilliant talk at the conference “The Place of Science in the Modern Culture” which was arranged in Akademgorodok near Novosibirsk in the end of April of 1987.

A.D. titled his talk “Science at the Center of Culture” so biting a part of the audience with antipathy to science. In my files there still reside some records of the main points of his talk. I insert a few of them here.

- *We live in the age of science.*
- *False theses: science beyond culture; science as next of kin to utopia and ideology; science as a tool for dehumanization.*
- *This is a spite of philosophers. A philosopher is an unsuccessful scientist full of mania grandiose.*
- *Science occupies the center of culture. Objectively, science is a system of knowledge and conception... Man must stand in the center of science. Man is not only a creator but also an object and ultimate aim of research and thought. Science asks not only “How?” but also “What for?”*
- *Truth is a tool of good. Science leads to truth and its entire credenda appeal to the mind so liberating human mentality.*

A.D. knew much about religion, always contrasting religious belief and scientific search. With love to precise definitions innate in mathematicians, he often cited the following words by Vl. S. Solov’ev from the article “Faith” in the Encyclopedic Dictionary by F. A. Brokgauz and I. A. Efron:

Faith (*philos.*) means the acceptance of something as being true with the resolution surpassing the power of external proofs by fact and formal logic.

A.D. was fond of reiterating that he believes in nothing. This statement usually called about the retort of the audience: “Neither in Communism?” which always gained the affirmative answer of A.D. It goes without saying that the lectures of A.D. were often accompanied with sneaking letters to various local party committees.

A.D. had explicated his views of interrelation between religion and science in the booklet “Scientific Search and Religious Belief” which was published by Politizdat in 1974 with run of many thousand copies. It seems to me that this article does not lose its actual value nowadays in the time of an unprecedented blossom of mysticism and pseudoscience.

O. A. LADYZHENSKAYA AND A STRUGGLE AGAINST THE LAST INSINUATIONS

At the end of the 1980s Aleksandr Danilovich suddenly became a target of some slanderous attacks that ran as far as accusations of “lysenkoism.” Yu. G. Reshetnyak and I were compelled to write much about A.D. Hatred to calumniators boiled in our soles. However, we worked at ease feeling the inspiring warmth of final exposition of a just-proven new theorem. In the most critical moments of controversy we readily found out many objective facts witnessing the intellectual honesty of A.D. and his devotion to serving science and taking care of the fates of his fellow scientists.

Stuffed up with concocted reminiscences, massaged citations, archived data full of sneaking and quasi-sneaking letters to “competent authorities” and having mastered up many tricks typical of a barrister, I grew up to appraise the moral standpoint of O. A. Ladyzhenskaya tied with A.D. by many years of friendly relations.

In the spring of 1989 I happened to be in Leningrad at the peak of controversy about Alexandrov’s “lysenkoism.” Olga Aleksandrovna asked me to visit her in LOMI (the Russian abbreviation for the Leningrad Department of the Steklov Institute). In contrast to the majority (including some friends of A.D. who always requested the objective proofs of A.D.’s innocence), Olga Aleksandrovna rejected from the very beginning all my attempts to show papers, compare figures, etc.: “Sëma! I need none of this stuff. Tell me only what we must do for A.D.”

It seemed to me that the formal position of Leningrad’s mathematicians will be important for A.D. Olga Aleksandrovna agreed with this opinion. She was then a deputy chairperson of the Leningrad Mathematical Society (LMS) (and the chairperson was D. K. Faddeev).

Soon after that V. A. Zalgaller sent me to Novosibirsk the following statement of the LMS which was adopted unanimously at the meeting of March 28, 1989:

Concerning the publication by the journal Energy (1989:1) of a letter of Academician of the Siberian Division of the Academy of Sciences of the USSR V. E. Nakoryakov, the Leningrad Mathematical Society (LMS) announces that the letter by V. E. Nakoryakov contains slander (refutable by proof) and an attempt to defame Academician A. D. Alexandrov, a member of the LMS and an outstanding mathematician. The Leningrad scientists remember many good deeds by A. D. Alexandrov: his efforts helped to save science and his fellow scientists in the grim years which required his great personal fortitude.

A.D. was touched with this statement. Also, it was a great help for Yu. G. Reshetnyak and me in the public polemics of those years.

The reader seeking for more detail can restore the main events by looking through the corresponding publications in the *Herald of the Academy of Sciences of the USSR* (1989:7; 1990:3) and the relevant articles in the issues of the newspaper *Science in Siberia* of March 10 and October 13, 1989.

When a decade has elapsed, sharp contrast transpires between the figure of silence (*aposiopesis*) of the top officials of the Academy such as V. A. Kirillin, V. A. Koptug, G. I. Marchuk, et al. and the behavior of the scientists who consider the defense of the honor of a colleague against slander as their personal duty.

I keep a few letters that were unpublished in view of the standpoint of the then Academy bosses. I cherish the words of my long-term friend V. M. Tikhomirov, a professor at Lomonosov State University in Moscow:

I am sure that A. D. Alexandrov belongs to those who have always served the forces of good. I wish to express through your newspaper my feeling of admiration for him, his brilliance, intellectual gift, and human generosity. I've never heard that Aleksandr Danilovich caused harm to the persons he met in life but I heard that he helped them and promoted the development of science.

Of utmost importance for me are the words by V. I. Smirnov, a person of unsurpassable moral standards, who wrote that A. D. Alexandrov controlled the University using the power of moral authority!

There is no denying that the attitude of contemporaries meant much to A.D.

I have no desire to expatiate upon this story even though it had a "happy end": In October of 1990 A.D., the only mathematician in a group of biologists, was decorated for special contribution to preservation and development of genetics and selection in this country.

The Decoration Decree appeared by the initiative of Professor N. N. Vorontsov who then hold the position of the Chairman of the Governmental Committee for Nature of the USSR. In a lengthy interview to the newspaper *Izvestiya* as of November 3, 1990 Nikolaï Nikolaevich testified:

Aleksandr Danilovich was the Rector of Leningrad State University and he made much for preservation and development of genetics. He invited to LSU many of those expelled for their scientific views from other cities. Young persons simply fled to Aleksandr Danilovich Alexandrov to gain custody. The courses of lectures in LSU differed drastically from the Lysenko rigmarole that was delivered (and, I am afraid of that, is still delivered) by the teachers of agricultural colleges. This determined the general atmosphere of the academic life of Leningrad.

Alexandrov took care of the level of science as a whole. All scientists know: liquidation of one of the branches will bring about repercussions on the entire frontiers of science. That is why in many running years, many physicists and mathematicians wrote letters to the Central Committee of the Party about the importance of genetics. By the way, when somebody says that A. D. Sakharov was late in taking the road of political struggle, it is not true. His name appeared in the letter of physicists of 1953 together with the names of Kapitsa, Semënov, and Varga. This letter was handled to Khrushchëv by Kurchatov. The letter of physicists was followed by a letter of mathematicians: Kolmogorov, Sobolev, Alexandrov, and Lavrent'ev. I was a first-year postgraduate when I collected their signatures.

THE ENGLISH LANGUAGE

Another not universally known trait deserves mentioning. A.D. was a person of a discriminating artistic taste with a poetic gift. He wrote many poems and plays but most of them are lost since he had an absolute memory and wrote them down only at somebody's request or to make a present of them.

A.D. was in full command of the English language: He delivered lectures, cited classics, and even wrote poems in English. S. I. Zalgaller saved in her memory the following lines:

*My heart is full of burning wishes,
My soul is under spell of thine,
Kiss me: your kisses are delicious
More sweet to me than myrrh and wine.
Oh lean against my heart with mildness,
And I shall dream in happy silence,
Till there will come the joyful day
And gloom of night will fly away.*

Not later than in 1944 A.D. had made this interpretation of a celebrated poem that was written by A. S. Pushkin in Russian as far back as in 1825 and soon became an immortal romance by M. I. Glinka.

It is curious but one of our first conversations in the mid-1960s ran in English (I was a freshmen; and A.D., a brand-new academician). I recall the presence of some "English-speaking" diplomat in the hall of a small canteen in the Golden Valley where we dined those years. A.D. remarked that it is indecent to use the language that is not comprehended by everyone present and we proceeded in English.

I also recall an episode of the 1970s when on some occasion I cited a few lines of the 66th sonnet by W. Shakespeare in English, and A.D. continued recital in a flash. This took place long before the famous Georgian "Repentance" by T. Abuladze.

The circumstances of the beginning of the 1990s drove me to writing a short booklet on English grammar to alleviate the burdens of life for my friends who were seeking some sources of nourishment. A.D., always a very attentive reader, pinpointed a slip in a King James's citation of Ecclesiastes.

And in June of 1993 he sent me the following lines in a sloppy handwriting:

*Since legs, nor hands, nor eyes, nor strong creative brain,
But weakness and decay oversway their power,
I am compelled forever to refrain
From everything but waiting for my hour.*

He has never sent me any verses since then...

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