

Российская академия наук  
Санкт-Петербургская кафедра иностранных языков

---

**КОММУНИКАЦИЯ,  
КУЛЬТУРА И ЯЗЫК  
В ОТКРЫТОМ МИРЕ НАУКИ**

Материалы  
международной конференции

Санкт-Петербург, 22 - 25 июня 1997 года

Санкт-Петербург  
1998

Редакционная коллегия:

Ю.П.Третьяков (отв. ред.), Н.А.Александрова,  
В.В.Кусков, О.Н.Труевцева

*Печатается по решению  
Ученого совета  
Санкт-Петербургской кафедры  
иностраных языков  
Российской академии наук*

## СОДЕРЖАНИЕ

Совместная резолюция участников международной конференции "Коммуникация, культура и язык в открытом мире науки" .....	4
Александрова Н.А. Людмила Валерьевна Славгородская. <i>In memoriam</i> .....	8
<b>I. Наука и язык науки в изменяющемся мире.</b>	
Арнольд И.В. Наше наследие: из истории российской филологической науки .....	12
Кусков В.В. Лексическая когерентность научного текста .....	16
Ильина И.Г. Имя собственное атрибутивное в научном тексте .....	22
Барабанова Ю.М. Пародия стиля научных сочинений в «Истории Нью-Йорка» В.Ирвинга .....	28
Власова Е.Л. Психологические механизмы говорения. Мотивация ..	33
<b>II. Современные тенденции в развитии пост-университетского образования.</b>	
Соколова А.М. Специфика изучения иностранных языков в системе Российской академии наук .....	36
Кирвайтис Г. Новое в преподавании английского языка взрослым в рыночных условиях .....	41
Нестерова В.А. Новые курсы обучения английскому языку в Карельском научном центре РАН .....	45
Ильина С.Г. Technical writing в курсе обучения английскому языку .....	48
Казей Е.О. Новое в проведении экзаменов .....	52
Фролькис Н.Д. Учет реальных коммуникативных потребностей учащихся в процессе пост-университетского образования .....	55

© Санкт-Петербургская кафедра иностранных языков  
Российской академии наук, 1998.

Kenneth J. Knoespel

## FROM ROCKET-SCIENCE TO MARKET-SCIENCE: RUSSIAN DISCOURSE COMMUNITIES IN THE DIGITAL AGE

**Introduction.**<sup>1</sup> Study of the multiple communities that constitute the practice of science and technology marks a major aspect of research into science and technology in the past three decades. It is quite appropriate to characterize much of this research as a consequence of the human or social sciences discovering a subject of research in the natural sciences. Such work which has drawn upon research in sociology, literary theory, linguistics, and history has emphasized the social practices of science and stressed the constitutive function of communication. In the following remarks, I want to draw attention to several features of the study of communication in science and technology by looking at the changing conception of technical communication. Next, I would like to say a few words about the problems of integrating the study of technical communication into Russian practice. Finally, I want to recognize the importance of our evolving electronic environments within the study of communication in the practice of science and technology.

**Part One: The anthropology of scientific practice.** The discipline known as technical communication within an Anglo-American setting must be carefully situated within the evolving methodologies for approaching science and technology. First we must understand that technical communication in its most common meaning describes the practice of teaching students in engineering and the natural sciences to write and speak effectively about their subjects. Given Russian perceptions that I have encountered, it is important to underscore that technical communication is not immediately associated with technologically enabled communication.<sup>2</sup> While technical communication has certainly given attention to the practice of communication within electronic computer environments in the past two decades, its focal point has remained directed toward writing and the preparation of documents within specifically defined professional communities. In a somewhat broader setting, technical communication is also used to describe the work of professionals within business and corporate environments who have responsibility for writing manuals or operating instructions for machinery or complex production processes. While some technical writing may be thought of as directed outwardly or towards the consumer, other technical communication might be characterized as directed inwardly or towards the communication practices internal to a company or business.

Generally it is assumed that, whether directed outwardly or inwardly, the fundamental objective of the technical writer is to provide material that conveys information in clear and efficient manner. The pragmatic or functional aspects of

technical communication has often led to its perception as a limited discipline. In contrast to the "higher" disciplines involved in the study of science -- disciplines such as the philosophy and history of science -- technical communication is frequently relegated to a status of a "lower" discipline. If it is approached from the context of literary scholarship its lower status is confirmed by its association with the unpoetic or nonfigurative use of language. Even though technical communication appears relegated to a lower position within the hierarchy of disciplines directed toward the social study of science, it must be viewed as part of the cluster of disciplines that emerged to enhance the practice of science and technology. Technical communication, like the philosophy of science or the history of science, should be viewed from a historical vantage point as a practice that complements an ongoing belief in techno-scientific progress. Such an understanding not only came to be shared during the Soviet period but stands as a fundamental justification for looking at the history of science as a means for understanding the conditions that contributed to scientific progress.

While we do not have time to review ideological arguments for the history of science or the philosophy of science from either a Marxist-Leninist or capitalist vantage point, I want to notice that the practice of technical communication inevitably becomes an expression of society's fundamental beliefs in science. Technical communication bears with it an expectation that successful communication contributes to successful science. One significant but often ignored aspect of the technical communication is that its practice occurs in environments in which students are expected to make linkages between their research and the broader significance it has for academic as well as commercial enterprise. Besides teaching students discreet skills, technical communication also bears with it assumptions that students will develop their skills in research environments that expect them to explain the significance of their work for multiple communities. It would be a serious mistake to conceive of technical communication as only teaching students to compose resumes and letters for job applications. As important as such skills are, they work only as preliminary negotiating tools for one's engagement in far more extensive networks of science and technology. A fundamental but sometimes hidden assumption for working within these networks is that practitioners in science and technology on all levels will be prepared to explain, defend, and promote their work in multiple communities. Considering the complicated levels of control within Soviet science, controls which promoted scientific advance but limited the way individual scientists or technologists could promote let alone market their research, it should not be surprising it is precisely this last set of assumptions that has provoked some of the most interesting discussions in the seminars that I have taught in Russia since 1991.

Understanding both the positivistic ethos and social networks at play within the practice of technical communication is important because they create a background against which we can approach even more detailed analysis of communication within science and technology. The work I would look at next does not reject technical communication because of its "lower" status but instead emphasizes its strategic and even privileged position within the study of science and technology. The role of technical communication within science and technology studies has been significantly extended or recast by the work of the French sociologist Bruno Latour.<sup>3</sup> Before looking at some of the topics that Latour emphasizes within the practice of science, it is necessary to look at the distinction he makes between "ready made science" and "science in action."<sup>4</sup> According to Latour, "ready made science" consists of those representations of science that appear as established and unquestioned. The presentation of science in introductory science texts would be an example of such science. An important feature of ready-made science is that its formulations are black-boxed or treated as if they are inaccessible for the beginner and practitioner alike. For example, within the teaching of mathematics, mathematicians treat innumerable formulas as givens. Instead of asking about the derivation or theoretical grounding of such formulas they remain black-boxed. In distinction from the learned practices of science — textbook science —, we discover that the actual practice of science is socially constituted and intimately linked to practices of communication. Latour identifies his methodology in a series of "Rules of Method." "Rule 1. We study science *in action* and not ready made science or technology; to do so, we either arrive before the facts and machines are blackboxed or we follow the controversies that reopen them. (258)"<sup>5</sup> For Latour, the relation between the two perspectives is hardly static but descriptive of a polarity between which science takes place. Probably, the best way to present such dynamic tension is to notice that for Latour science becomes defined through the ways cultures traverse or negotiate between science in action to ready-made-science. The association of scientist's name with a law, process, procedure in a text book or universal authorization represented in a scientific award such as the Nobel Prize would be examples of the formulation of ready-made science. The value of Latour's distinction appears in his effort to map the social processes at work in the dynamic process that moves the scientist from one pole to the other. Although it is impossible to develop these components in detail here, I want to identify some of the major features on Latour's map. The following components are part of the terrain: 1) literature, 2) inscription devices, 3) laboratories. Each component involves a stage in building and strengthening an argument for one's ideas. For example, if one publishes articles, one shows that a professional community is interested in one's ideas. If sophisticated machinery provides support for one's ideas, it becomes a crucial vehicle for extension of

one's thinking. If one can build an entire laboratory, the laboratory itself becomes a living monument to the strength of one's ideas. For Latour, the entire process becomes an expression of the strategic development of modalities that will strengthen an idea within one or more communities. Latour's account of the modalities at play within the constitution of science has much significance for the study of communication. In the broadest sense, Latour's schema helps us see that a great deal of technical communication in the past has dealt with ready-made science. For example, when textbooks in technical communication emphasize the forms of particular genre (resumes, letters of recommendation, the scientific report, the article, abstract, cover or business letters, memoranda etc.) they frequently do so as if they were looking at a museum of scientific practices rather than at forms that were still being developed. The recognition that technical communication is often based on the past or established record of successful science is important because it reminds why technical writing is often associated with the dullest kinds of utilitarian communication. One of the most interesting implications of Latour's discussion is that the study of technical communication should involve not simply the study of genres from text-book pattern books but that it should include the practice of communication. In effect, Latour's anthropological analysis of the practice of science provides a significant basis for approaching communication in the sciences not as narrow pragmatic practice but as a layered anthropological field.<sup>6</sup> Although I emphasized the practice of science above, I also want to notice that the study of communication within history of science has obvious importance. For example, the study of communication structures and practices within the space programs of the USSR and the United States provides a valuable set of data on the history of twentieth-century science and technology. A recent book on Sergei Pavlovich Korolev and the Soviet race to the moon reveals innumerable instances where it would be possible to study highly developed forms of Soviet technical communication.<sup>7</sup> I emphasize such an example because for both Americans and Russians involved in teaching technical communication, one limits oneself by thinking that one's responsibility is limited to helping scientists and engineers write or communicate successfully. Teaching technical communication is also a form of anthropological field work.

**Part Two: Russian practice.** The political changes that have taken place within Russia in the last ten years are of enormous importance. But as we recognize such transformations, it is absolutely essential that the multiple changes symbolized by our reference to Russia instead of the Soviet Union not at once be associated with the whole-scale rejection of Russian scholarship during Soviet period. I draw attention, perhaps somewhat boldly, to the complex status of Russian scholarship because a strong assumption exists in the west and in varying

degrees even in Russia that a new era has emerged in which Euro-American methodologies deserve more attention than Russian practice. Several years ago I participated in an American organized workshop for the Russian Academy of Sciences, St. Petersburg on new methodologies in the history of science and technology.<sup>8</sup> The workshop featured a series of papers by leading Russian and American historians of science and was noteworthy because of the high level of the presentations but also because of the privileged position Euro-American scholarship assumed before Russian scholarship. While such performance is comprehensible, it is also misleading. Especially from the vantage point of the west, the past decade has been viewed as a new opening of Russia akin to the period of Peter the Great. While such broad comparisons may be useful, they also obscure or conceal the ways in which Russian intellectual experience retains and develops its own integrity through rich critical interaction with multiple expressions of scientific practice. At a time that language pedagogy in Russian institutions may learn from American or English practices in technical communication, it is also important that the international academic community learn from Russian research and practice. Above all, it is important that we learn through our mutual transcultural study of communication.

I drew attention to the distinction between ready-made science and science in action because it urges us to give more attention to the multitude of communication practices that surround science and engineering. The study of the practice of communication -- the anthropology of communication, if you will -- is by no means restricted to western models but also deserves to be developed from the vantage point of Russian theory. Of course, as the works of Vygotsky, Bakhtin, Shklovsky, Lotman, and Uspensky -- to name only a few -- show a significant number of Russian theoretical models already exist for dealing with communication within scientific communities. The complex story of Bakhtin reminds us as well what happens when a Russian theorist becomes more broadly assimilated into the canon of western theory in translation before he is rediscovered within a Russian setting.<sup>9</sup> A recent collection of articles that emerged from some of my initial work in Russia emphasizes the importance of recent Russian work on science studies and should caution Russian colleagues from drawing on American or British work in technical communication without also asking about the Russian grounds for such research.<sup>10</sup> Let me notice in particular that in contrast to much American work that has tended to be pattern or genre oriented, Russian work in communication has long been directed to the practice of communication within social communities.

While American work in technical communication has tended to be pragmatically oriented to training practitioners to present information clearly, Russian research in communication and then by extension into scientific communication has a foundation in social linguistics. At least a preliminary comparison of Russian

and American research on communication within scientific and technical communities suggests that while Russian work emphasizes theory, American work stresses teaching basic skills. Significantly, however, I would like to suggest that it may not be an exaggeration to think of Russian communication theory as already having science in action as a departure point.

Let me offer several examples of Russian work that might be regarded as providing a basis for further study of the function of communication within the constitution of science. In a recent interview Anatoly Ahkutin and Vladimir Bibler remind us that the legacy of Bakhtin in regard to science studies remains insufficiently recognized. Rather than viewing Bakhtin's work as limited to the study of literature, Ahkutin and Bibler emphasize its multiple applications for scientific discourse.<sup>11</sup> On the level of everyday practice, it is possible to apply Bakhtin's idea of speech genres to scientific practice. Bibler notices that one should approach the scientific article as a "half-text" which is completed by the reader. "Literary creation is -- by its definition and conception -- always a 'half-text' that takes on its wholeness and completeness (without ceasing to be open-ended?!) in the 'author-reader' intercourse. Unfortunately, this essential aspect of Bakhtin's approach is paid no heed in so-called science studies, in the history of science." (344) "What Bakhtin's approach enables is the perception of the pattern of (artistic) creation even in the scientific text, its comprehension as an integral creation of theoretical thought." (346) In effect, they suggest that scientific writing orchestrates understanding within a community. The question of how we use texts from the history of science to provoke discovery or stage our own understanding in the present challenges us to think about the dialogical constitution of scientific practice from a broader vantage point as well.

Now, this approach opens the path to the deeper dimension of the latter -- namely, the issue of intercourse between the present generation and past ones, which are no less real and 'ever-present' in their creations than we are in ours. It is emphatically not the case that we take notice of them only in order, so to speak, to satisfy ourselves that we have indeed 'made great progress,' nor that our attitude toward the works of past generations is simple: 'very interesting from the historical point of view though it may be to know what they -- past and gone -- had been doing, but all this has surely become 'a thing of the past' and is of no real importance for the science of our own day.' Not at all! The former knowledge does enter into the very substance of present-day scientific (not just *historico-scientific!*) theories, and in such a way that the theoretical constructions of Galileo or Newton turn out not simply to represent the preceding stage of present-day theoretical idealizations, but -- on the assumption of one or another type of extremal idealizations -- to enter into the relationship of 'correspondence' or 'complementarity' with them. Thereby the character of the disci-

pline of the history of science changes. From 'times long since vanished,' which it could describe in a somewhat detached manner, it suddenly issues forth into the present — inasmuch as it enters the very structure, the core of theoretical knowledge proper. (346)

The importance found in the interview is by no means restricted to realms of the history or philosophy of science. Its value lies precisely in their repeated emphasis in the actual practice of communication. In effect, the anthropological emphasis that I have identified in the work of Bruno Latour also appears in the work of contemporary Russian discourse.

**Part Three: Ethnology and Communication within Electronic Environments.** The intimate connection between what Euro-American scholarship has called cultural studies and what Russian scholarship refers to as ethnology is perhaps one of the more revealing links that still needs to be recognized in the transcultural study of the past decade. Although it is very rarely recognized, the study of American shopping malls or the semiotic study of Disney World is indebted to the foundational ethnographic work of Russian structuralist and semiotic study probably best represented in the work of Yuri Lotman.<sup>12</sup> I want to challenge us to make this link not only because it reminds us once again of some of intellectual links that bring our study of communication together but even more because it allows to turn our attention on the electronic technologies that not only have informed this conference but which are transforming the very nature of scientific communication. At a time when the internet is expanding daily, we must be careful not to view the internet as a neutral or transparent carrier of our messages. In order to focus attention on the importance of studying the electronic technologies that will increasingly mediate communication within scientific communities, I would like to suggest five areas that deserve transcultural research:

1. What new forms or genres of communication are evolving as a consequence of computer technology? Well beyond the changes that have occurred in the formulation and distribution of resumes, preprints, letters of inquiry, digital environments have provoked a rapid expansion of short forms. While Jolles introduced the term short forms (*einfache Formen*) to describe the shorter rhetorical forms such as enthymemes used in the Latin Middle Ages, it is possible to use the term question how we should approach the e-mail message, the web-page, or the multiple information inquiries that consist of kinesthetic interaction with monitors.<sup>13</sup> Each interaction or exchange deserves to be examined not only for the way that it augments or complements traditional genre theory but for the ways that it challenges us to recognize that each are only "half-texts" completed through the interaction of the reader or respondent.

2. How are we to understand the constitution of scientific communities within

electronic environment? Computer technology reveals how utterly dependent we have become on inscription technologies to enable and even affirm scientific research. Besides the question of whether communication practices differ between disciplines, it is important to ask how the availability of computer technology or the co-existence of multiple generations of computer technology shapes or limits the interaction of scientific communities. Such questions should not only identify issues of economic differences between countries but should be used to articulate the ways technologies or practices develop to counter disparity between available technology.

3. What significance does visualization or the graphic display of information in evolving computer environments have for theories of communication? Computer technology has created an environment in which the visualization of information in the form of pictures, graphs, drawings has become common place. If we are indeed participants in the development of a new international scientific language, we need to understand our role in teaching graphic or visualization rhetoric. While visual information was transmitted through architecture and painting for thousands of years, it is now being transmitted electronically through television and computer images that embody a range of rhetorical practices. Our ability to explain the rapidly expanding sophisticated use of images will be central to the study of communication practices.

4. How should we approach the status of speech or sound within electronic environments? The disappearance of the keyboard interface for the computer will transform the status of oral communication between humans and machines as well as between humans. We should prepare for the implementation of new forms of speech-interaction with machines by giving attention to the multifaceted ways that oral communication is already provoked within computer environments as means for "explaining" functions or operations that are difficult to communicate in written form. From such a vantage point, we should be prepared to ask how the graphic settings of computer environments create fields for oral communication. Computer technology provides a laboratory for the elaboration or further application of Bakhtin's theory of "speech genres."

5. In what ways can computer technology help us understand the importance of other technologies of representation within the history of science? Computer technology does not only look to the future but may also help us better understand how technologies of representation worked in the past. In effect, computer technology is not simply a transparent technology that conveys information but functions as a kind of time-machine or agent that places previous forms of technology into relief. As we look and even speak into the screen of our computer monitors, we should be prepared to see through the multiple technologies of representation developed within the history of human civilization.

**Conclusion** The name of the conference should be carefully understood for while the title certainly alludes to the shift from central control of scientific research within the Soviet period to the open science associated with the economic transformations now underway in Russia, it would be a mistake to view the name only from the vantage point of economic transformation. The name of the conference makes me think of the title Alexander Koyré give his famous book: From Closed World to an Infinite Universe (1957) and it is from such a vantage point that I would conclude my remarks.<sup>14</sup> While the shift from a Ptolemaic to Copernican world view certainly marked a remarkable conceptual dilation, it did not convey a shift toward an intellectual terrain that suddenly lacked conceptual boundaries. As Koyré shows, the shift in cosmologies included significant psychological counterparts and provoked intense discussions about the nature of the universe and the ways in which humans could understand their place within their new feelings toward infinity. I would suggest that it would be quite appropriate for us to think about our discussions here as an opportunity to review our bearings at a time of transformation.

It is also wise to recognize that our work in the study of communication has more than a small role to play in shaping the transformations in which we all participate and all share.

#### Notes

<sup>1</sup> I would like to thank Professor Yuri Petrovich Tretyakov for organizing this conference and to the Soros Foundation for making it possible to meet colleagues from Belarusia, Latvia, Estonia as well as Russia. Professor Tretyakov and I have worked together since 1991 when we initiated a series of faculty exchanges between the Russian Academy of Sciences, St. Petersburg and the Georgia Institute of Technology. Our ongoing work, including numerous discussions in Russia and the United States, has become a rich resource for research for rethinking the foreign language curriculum within Russian and American education.

<sup>2</sup> Since 1991 I have met with Russian colleagues in a range of disciplines within the Russian Academy of Sciences in St. Petersburg, Moscow, and Petrozavodsk. It is often assumed that technical communication only pertains to work with technical media including television and computers.

<sup>3</sup> All my references are to Bruno Latour, Science in Action: How to follow scientists and engineers through society (Cambridge: Harvard Univ. Press, 1987). Latour's work may be viewed as an extension of his work with Steve Woolgar, Laboratory Life: The Construction of Scientific Facts (Princeton: Princeton Univ. Press, 1986 [1979]). For a more recent discussion of technology see Bruno Latour, Aramis or the Love of Technology (Cambridge: Harvard Univ. Press, 1996).

<sup>4</sup> In several significant ways, the way Latour deploys his distinction between "Ready Made Science" and "Science in Action" by using the two-faced Roman god Janus reminds

one of Francis Bacon's redirection of Greek and Roman mythology in his Wisdom of the Ancients Latour formulates a total of seven rules. In addition to Rule 1 quoted above, the rules are as follows: Rule 2: To determine the objectivity or subjectivity of a claim, the efficiency or perfection mechanism, we do not look for their intrinsic qualities but at all the transformations they undergo later in the hands of others. (Chapter 1) Rule 3: Since the settlement of a controversy is the cause of Nature's representation, not its consequence, we can never use this consequence, Nature, to explain how and why a controversy has been settled. (Chapter 2) Rule 4: Since the settlement of a controversy is the cause of Society's stability, we cannot use Society to explain how and why a controversy has been settled. We should consider symmetrically the efforts to enroll human and non-human resources. (Chapter 3) Rule 5: We have to be as undecided as the various actors we follow as to what technoscience is made of; every time an inside/outside divide is built, we should study the two sides simultaneously and make the list, no matter how long and heterogeneous, of those who do the work. (Chapter 4) Rule 6: Confronted with the accusation of irrationality, we look neither at what rule of logic has been broken, nor at what structure of society could explain the distortion, but to the angle and direction of the observer's displacement, and to the of the network thus being built. (Chapter 5) Rule 7: Before attributing any special quality to the mind or to the method of people, let us examine first the many ways through which inscriptions are gathered, combined, tied together and sent back. Only if there is something unexplained once the networks have been studied shall we start to speak of cognitive factors. (Chapter 6)

<sup>6</sup> Latour's work has made a significant impact on the history of science and technology. One of the best examples of this influence is seen in the relation between his own work and the extensive discussion of Steven Shapin and Simon Schaffer, Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life (Princeton: Princeton Univ. Press, 1985).

<sup>7</sup> See James Harford, Sergei Pavlovich Korolev: How one man masterminded the Soviet Drive to Beat America to the Moon (New York: John Wiley & Sons, 1997). It would be highly instructive to compare Soviet and American programs from the vantage point of technical communication. For a comparable study of NASA see Howard E. McCurdy, Inside NASA: High Technology and Organizational Change in the U.S. Space Program (Baltimore: Johns Hopkins Univ. Press, 1993).

<sup>8</sup> The conference, entitled "Science & Technology With a Human Face," took place in June 1994. I participated in the meetings as an observer and took extensive notes as a kind of anthropological probe on the presentations delivered in English and Russian as well as the interactions between American, European, and Russian participants.

<sup>9</sup> It is impossible to cite even a portion of the vast scholarship that has evolved surrounding the "English" Bakhtin. For a significant bibliography as well as detailed study of Bakhtin's re-assimilation into a Russian setting see Caryl Emerson, The First Hundred Years of Mikhail Bakhtin (Princeton: Princeton Univ. Press, 1997).

<sup>10</sup> See Communities of Science and Culture in Russian Science Studies ed. Daniel A. Alexandrov as special edition of Configurations: A Journal of Literature, Science, and Technology (Vol. 1:3 [1993])

<sup>11</sup> See "Bakhtin's Legacy and the History of Science and Culture: An Interview with

Anatolii Akhutin and Vladimir Bibler" (conducted by Daniel Alexandrov and Anton Struchkov in *Configurations*, 335-386.

<sup>12</sup> See *The Semiotics of Russian Cultural History: Essays by Iurii M. Lotman, Lidia Ia. Ginsburg, Boris A. Uspenskii* ed. Alexander D. Nakhimovsky and Alice Stone Nakhimovsky (Ithaca: Cornell Univ. Press, 1985). Further study is necessary on Russian ethnographic research before the 1917 revolution and its bearing on the development of Russian formalism.

<sup>13</sup> André Jolles, *Einfache Formen: Legende, Sage, Mythe, Rätsel, Spruch, Kasus, Memorabile, Märchen, Witz* (Tübingen: Niemeyer, 1982 [1930]).

<sup>14</sup> See Alexandre Koyré, *From the Closed World to the Infinite Universe* (Baltimore: Johns Hopkins Univ. Press, 1957).

Т. П. Третьякова

### ЯЗЫК НАУКИ И ТЕОРИЯ АРГУМЕНТАЦИИ

Язык науки как объект исследования в настоящее время рассматривается не только с точки зрения специфики грамматики, стилистики и семантики, но и с точки зрения прагматики, т.е. выявления тех аспектов значения языковых структур, которые относятся к проявлениям «человеческого фактора». В этом отношении большое значение имеет работа Л.В. Славгородской<sup>1</sup>, посвященная изучению диалогичности научного текста. Диалогичность понимается как речевое проявление социальной сущности языка, а для языка науки это прежде всего отражение тех компонентов построения научного текста, которые относятся к научной творческой деятельности, включающей наряду с познавательной информацией, оценочным компонентом текста также и элементы общения. В наиболее прямом виде диалогичность научного текста проявляется в имитации устно-разговорной речи, при этом исследователи отмечают, что научный текст обнаруживает такие разновидности диалогических отношений, как, например, побуждение, эмоциональный комментарий, модалный комментарий и т.д. В более широком смысле диалогичность научного текста может трактоваться как реализация коммуникативной функции, достижение взаимопонимания в той или иной сфере знания. В этом случае средствами отражения диалогичности являются любые способы организации речи, которые направлены на достижение адекватного понимания, и значимыми будут построения как логического информативно точного высказывания, так и выразительного, целенаправленного.

Текст является продуктом коллективной творческой деятельности, в частности, совместной деятельности автора и читателя; главным при этом остается тот факт, что автор ставит своей целью убедить читателя в правомер-

ности тех выводов, к которым он приходит в результате научного исследования.

Для современных методов анализа текста, которые в основном ориентированы на поиск структур убеждения, характерно обращение как к логике в плане поиска истинности или ложности, так и к прагматике в направлении поиска интенций и целей создания текстов. В последнее время в результате динамических процессов, проходящих в общественном сознании и при создании научных текстов, и при их анализе в центре внимания оказался сам коммуникативный процесс, в ходе которого достигается взаимопонимание людей, занимающихся разными областями знаний и принадлежащих к разным геополитическим пространствам.

Тесная связь языка с формами жизни обнаруживает большое значение изменений в типах и методах коммуникации. Последствия этих изменений возможно сопоставить с изменениями в способах производства. Именно этим обстоятельством вызван интерес к аргументации, которая интегрирует гетерогенные социальные практики. Аргументация понимается как вид коммуникации, направленный на освобождение от догм и предрассудков; важное место занимает философия как форма критической рефлексии, помогающая найти адекватные для настоящего момента направления развития научной мысли.<sup>2</sup>

Так называемая теория аргументации как интеграционная дисциплина развивается в настоящее время в рамках «новой риторики». Она связана с проведением исследований философских и лингвистических проблем в аспекте развития цивилизации, в частности, цивилизующего влияния дискурса. В качестве основ этого развития выступают и научные дискурсивные практики, которые воздействуют на сознание, меняют стереотипы сознания. К идеологическим дискурсам обычно относят науку, литературу, прессу. Даже язык науки, классифицирующий, тематизирующий и систематизирующий действительность, может использоваться властью как определенная схема, модель для покорения природы. В игру власти и познания оказываются втянуты языки искусства и литературы, а в последнее время и языки естественных наук, которые моделируют и восприятие человеком природы, и возможность ее модификации. Научный дискурс считается вовлеченным в процесс общественного развития как одно из средств манипуляции тех, кто пользуется языком.<sup>3</sup>

Коммуникативный процесс, таким образом, может рассматриваться как достижение взаимного признания, как совершенствование стратегии и тактики влияния и как новая форма достижения взаимопонимания. Несмотря на трудности аргументации и коммуникации, связанные с обоснованием фундаментальных предпосылок познания и культуры, к настоящему вре-