

Axiological Dimension of the Modern Science Communication

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Svyrydenko, Denys, Nataliia Boichenko, and Galyna Bondarenko (2024) Axiological Dimension of the Modern Science Communication. *Philosophy and Cosmology*, Vol. 32, 97-106. doi

The article is devoted to the analysis of the specifics of the values of contemporary science communication. The values of science are still underestimated by many science researchers, in particular, sociologists. At the same time, the clear definition of the key values of science and intersubjective understanding about them increasingly determine the success of research. After all, values underlie the motivation of human behavior in general and the behavior of a scientist in particular. Academic values should be a priority in motivating the behavior of an individual scientist and science communication in general. Although values indicate to a greater extent what is desired, rather than what is available, they cannot be reduced to an ideal that is absent in reality, because values are already represented in the real behavior of people. The values of science have not only a regulatory nature of intellectual values (the abstract search for scientific truth as a higher goal, the power of the human intellect, academic freedom as an ideal, etc.), but also a specific functional and pragmatic significance – as specific instrumental values (institutional and organizational values, communicative competences, etc.). Despite the fact that

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values have an interpretive nature, they are neither subjectively limited nor arbitrarily relative to different social groups: the significance of values is determined by the communication in which these values are used by their carriers. The need for collective recognition of the values of science communication appears especially clearly and acutely in the clarification of the problems of ethics and morality of science communication, in particular in the issues of inclusiveness of science communication.

Keywords: science communication, academic values, communicative values, inclusiveness, moral normativity of science.

Received: 11 October 2023 / Accepted: 16 November 2023 / Published: 5 February 2024

Introduction

At the core of any civilization are the values that form its frame and determine its features, its unique contribution to the treasury of humanity and heritage of a particular nation. The present days also pose the question of values with all the sharpness and adherence to principles – moreover, everything without exception becomes subject to criticism and possible condemnation. The focus of discussions – both in theory and in practice – in the parliament hall and on the street, on the battlefields, is the problem of values. What to live for? What and how to protect? What can person rely on?

All this forces us to consider values as phenomena that determine leading human motivations and direct behavior in one direction or another. Actually, this interpretation is the basis of widespread and well-founded definitions of values (Jary & Jary, 1995: 715-717). In particular, this concerns the values of science communication, which largely determine both the image of modern science and the image of the world as a whole.

The problems of communicative values were paid attention to by leading philosophers and representatives of the social sciences. Among foreign scientists, there are Jürgen Habermas, Pierre Bourdieu, Manuel Castells, Niklas Luhmann, Herbert Marshall McLuhan, Francis Fukuyama, Karl Jaspers and many others explore the nature of values. Among the Ukrainian researchers of values there are Eugene Bystrytskyi, Myroslav Popovych, Serhii Krymskyi, Tetiana Orlova, Victor Pazenok, and others. Moral aspects of normative grounds of communication were elaborated by modern philosophers such as Dale Dorsey, Shelly Kagan, Geeta Kumar, Olle Risberg, and others. Still the works of these and other scientists do not offer anything resembling a coherent understanding of the axiological foundations of social existence. But all together, they strengthen the understanding of the fundamental importance of the value justification of the meanings of both individual human existence (Boichenko & Shevchenko, 2020) and the life of a community – from a small local community, regions, nation-states to civilization, and humanity as such. Also, it is evident that communicative values in available works are considered in passing, not as a special subject of research.

This determines the purpose of the proposed paper – to carry out a socio-philosophical analysis of the communicative values of modern science. Due to the excessively large scale of the problem, it would be appropriate to point out that this work can be defined as a fundamental statement of the problem about the axiological dimension of the modern science communication.

Counterfactual nature of values

The triad on which science and education are based is knowledge, competences and values. There is an understanding of values that actually equates them with the realm of dreams, propriety, and perspective. Thus, Ukrainian philosopher Vasyl Lisovyi points out that the term “value” denotes what is proper and valid however opposed to real: “The first step to understanding the nature of value was the realization that clarifying the concept of reality and truth does not provide an answer to the question – what is value. Truth answers the question of what reality is, Value answers the question of what is desirable or how something should be” (Lisovyi, 2002: 707). According to this approach, the value appears as an ideal for which it is worth fighting for and which (as is characteristic of an ideal) can never be fully embodied in real (“earthly”) existence. In our opinion, this understanding of value, although it has grounds, is not quite adequate and does not exhaust the multifaceted and inexhaustible interpretation of value. We should also note that the principled distinction between value and truth is controversial. The search for social truth can be both a search for values (their justification) and a search for an ideal. Strictly speaking, the search can also be related to something already purchased and, in this way, available. Let’s say, the historical experience of the people is an absolute value. But the realm of this multi-faceted experience creates the basis for radically different historiosophical studies and conclusions (even for calls to “refuse” everything negative in the past, “forget” traumatic experience, erase it from public memory).

Therefore, values have an interpretive nature, which brings them closer to an ideological way of seeing (constructing) social reality. The same realities in the coordinate system of different social worldviews can take on radically different meanings. The same personal freedom is perceived by some as a prerequisite for creating a personal life scenario, self-affirmation and self-creation, and by others as an area of risk and uncertainty, separation from the “roots”, etc. All this also applies to communicative values.

It is clear that no realities of spiritual life, no intellectual phenomena can ever meet the requirements of absolute perfection. There will always be a tangible gap between the ideal (which can be the ideal of a person, the ideal of an institution, and the ideal of a communicative order) and the form people have in life. Even when values are not directly mentioned, they influence (often in a decisive way) the course of events, form the basic foundations of social existence at all levels – from personal level to mankind.

Values are much more than what is related to the realm of what is appropriate, what is desired, what is dreamed of. As mentioned above, value can be (and is) a lot of what already exists and is worthy of attention, awareness and protection. Of the universal values, this is, of course, human life itself. It may be far from ideal, but we tend to consider life worth cherishing and protecting. Therefore, value is a lot of what we already have – and what we prefer to preserve, strengthen, inculcate. When it comes to the values of science and knowledge, we observe in Ukraine now quite a lot of phenomena in relation to which we have to state that these are not values-ideals. Everywhere they are burdened with contradictions; everywhere they hide considerable risks and dangers. But despite all this, they are the reality of the modern world of science, which in many ways shapes our Modernity as such.

Metaphorically, let’s say that the specified imperfection (which is inherent in all creations of the human mind and the mind itself) gives communicative values additional meaning, because it encourages us to focus on them all the time, to think about preservation and improvement. Summarizing, we state that the values of science (and science communication, in particular) combine the mode of their presence (you don’t need to dream about them – they

already exist in reality), albeit problematic presence, burdened with all kinds of contradictions, and the mode of projectivity, counterfactuality, where we try to imagine how this or that value should look, unfold in its ideal (optimal) plan and then and then implement it.

Specifics of the science communication values

Communicative values, in their typological belonging, are primarily intellectual and moral values. At the same time, these values include instrumental and functional aspects. Intellectual and moral values are essential, they relate to the very meanings of existence, the very purpose (mission) of science. Instrumental values can be considered as means and functions, as conditions and prerequisites of existence and implementation of intellectual and moral values. But each of them can be interpreted as an independent significant type of value. Life is a condition for freedom. Freedom is a condition for creative activity and academic activity in particular. But life and freedom are quite independent values, important not only for science and scientists.

What gives communication the status of a fundamental value? First of all, only the presence of free and unrestrained communication, in the body of which power, censorship and predatory interests (for example, corporations) do not interfere. For example, academic communication creates the spiritual and emotional atmosphere of a free community as prerequisite for a free society. In this atmosphere (according to Jürgen Habermas (2023), in the sphere of civil openness), there should be an exchange of thoughts and ideas, and a representation of development projects, political and social programs. Secondly, communication enriches all forms and varieties of information resources that an interested person – whether a scientist or an ordinary citizen – can turn to. And the third, communication allows overcoming individualism and limitations of subjectivity (Boychenko, 2010).

The values of science communication form a certain, relatively coherent system, where it is possible to single out basic, system-forming values (or values of the first order) – and values that are subordinate to them, that derive from them, although they can play an independent role and receive a separate worthy assessment.

Intelligence should be considered as the fundamental communicative value of science. It is clear that it is a universal human value (although we note that intelligence is often overlooked in various lists of values, this strange circumstance is discussed below), but it is precisely in relation to science and knowledge that intelligence acts as the core, a prerequisite for all cognitive and creative activity. There is no need (even if it were possible) to look for a single definition of intelligence – it is clear that under this universally broad concept there is a whole series (totality, unity) of mental abilities and competences that make it possible to adequately assess the world or a particular problem, to be aware of the complexity and the solvability of tasks itself, to look for and find ways to satisfactorily solve tasks, etc.

The result of the application of intelligence is an increase in knowledge, obtaining new information about the studied phenomena. Here we touch on an important moment when information (as a communicative value of a universal scale) through the mediation of the creative activity of a scientist (or team of researchers) turns into knowledge (new scientific knowledge) – as a communicative value of a higher order. The obtained creative results are transformed into publications (reports, messages, etc.), which appear in further communicative circulation as primary, fundamental academic communicative values. This product of creative intellectual activity is a constantly operating driving force of science communication, which forms science communicative reality. At the same time, publication values mutually form a balance of perception and criticism, approval and denial, recognition and neglect. Intelligence is again the benchmark – the individual intelligence of the author or the collective intelligence

of the researchers, both are the communicative intellect of the academic critique – and all this is in a state of continuous circulation, in the mode of continuous evaluations and re-evaluations, is integrated into conceptual systems and gives impetus to new directions of research. Therefore, science communication is a condition for the existence of human intelligence in an appropriate state. It should be noted that modern science and philosophy largely abandoned the unconditional exaltation of the human mind, seeing in it the guarantee of only positive innovations – and progress in general. Thus, the value is both the intelligence (mind) itself and a critical attitude towards it, awareness of the need to limit the encroachment of rationalism on the dominant force in social development.

We leave aside the question of whether personality itself should be considered a communicative value together with intelligence. In our opinion, any value presupposes a person as its subject and bearer. Of course, personality is an axiological structure and the creator of axiological changes. Of course, the question of the type of personality that corresponds to one or another system of values requires special consideration. This is the subject of a special extended study, which goes far beyond the scope of our topic, although it is of considerable interest. If we consider intelligence as a super-value, then its guises and forms can be interpreted as separate values, such as the ability to focus on problems, depth of mind, flexibility of mind, wit, ability to transfer acquired experience and knowledge from one (familiar) sphere to another (little-known, unfamiliar). Specially, such an intellectual value as critical thinking (including critical self-reflection of the mind) should be highlighted. The importance of this academic competency for science communication is difficult to overestimate.

The next communicative value of science is freedom in its broadest sense. It is a prerequisite for a dignified human existence in general, and a guarantee of cognitive activity, the basis of all academic freedoms that can exist. The intellect develops fully and productively in conditions of freedom (this thesis is not contradicted by the awareness of the need for disciplinary influences, the obligation to study some courses and academic disciplines), when a person has a wide choice for the realization of his life plans. Communicative freedom opens up exciting new possibilities that move and inspire a person. As Marshal McLuhan writes: “The division of faculties which results from the technological dilation or externalization of one or another sense is so pervasive a feature of the past century that today we have become conscious, for the first time in history, of how these mutations of culture are initiated. Those who experience the first onset of a new technology, whether it be alphabet or radio, respond most emphatically because the new sense ratios set up at once by the technological dilation of eye or ear, present men with a surprising new world, which evokes a vigorous new “closure” or novel pattern of interplay, among all of the senses together. But the initial shock gradually dissipates as the entire community absorbs the new habit of perception into all of its areas of work and association. But the real revolution is in this later and prolonged phase of “adjustment” of all personal and social life to the new model of perception set up by the new technology” (McLuhan, 1962: 22-23). It should be noted that these observations were made back in the days when personal computers had not yet become everyday life, and the Internet was still taking its first uncertain steps.

Multidimensional dynamism and growing openness generate and support the heterogeneity of the communicative environment of science, its flourishing multidimensionality and polyphony, which, in turn, causes the entropy characteristic of complex formations. The values of communication focus on continuous renewal, on innovative mutual enrichment of communication flows. Science communication embodies the growing complexity of science, gives special significance to such an important trend as the generalization of knowledge. This significantly increases the value of work in each special field of knowledge. After all, the

synergistic effect of breakthrough achievements affects the entire science social system, the entire process of research both in related disciplines and in distant academic fields (actually, there, *ad marginem*, the most interesting achievements take place).

Observation of the contemporary challenges to scientific values

Openness and speed are certainly valuable characteristics of modern science communication. But, in the terms when speed approaches to immediacy, the issue is the questionable quality of what has been made public. It often happens that publications that were in the leaders of the citation index for a certain time contained unverified or generally unreliable material. The pursuit of illusory priorities deforms the traditional ethics of responsibility and conscientiousness (which, as the same communicative values, are relegated to the shadows, as it were): “Rapid change occurs in that field whose problems are ‘ripe’ enough for solution. Scientists face a lot of problems, but all the problems cannot draw their full attention, because many of them are ‘unripe.’ There are periods in the history of science when scientists cannot get a satisfactory grip on its problems. An unripe problem thus takes time to be ripe, and then becomes the real possibility for new suggestions. Scientists are like farmers; they do not waste their energies in unprofitable operations and are careful to immediate demands. This is why the problems that are readily soluble attract their attention more readily than those that are not so” (Mannan, 2020: 183).

Unfortunately, sometimes such unreliability is a consequence of a conscious and frankly unscrupulous line that a scientist (or a whole team of researchers) follows for the success of communication, which attracts new creative forces, new intellectual resources for solving complex problems – recognition of the critical importance of communicative solidarity: for example, if a scientist is under political, religious or other restrictions and oppression in the country, all foreign colleagues of the local scientist must ensure the dissemination of his results.

In our opinion, it is very important to treat values consciously, to be able to proclaim and protect them, without exposing oneself to unnecessary risks of underestimation or neglect. In particular, it refers to situations where we think some things are “self-evident” and some values can “stand for themselves”. The specificity of values manifests itself in the fact that they do not form a harmonious unity, do not agree with each other, and often openly contradict each other. For example, freedom may conflict with considerations (and values) of security. But cognitive unrestrainedness overcomes caution and pushes to move forward, to overcome some last barriers. Therefore, one can point to such an important characteristic of the communicative values of science as their experimental character: “By making scientists extraneous to the process and establishing them as hierarchically dominant, this model is clearly science-centered: It problematizes the media and the public but not science. Therefore, its research agenda is reduced to how well the transmission process functions, either in terms of adequate media coverage or adequate public understanding. Furthermore, its attribution of any dislocation in the relationship between science and society

(or science and the public) to an inadequate transmission of information, which in our media-saturated societies primarily comes down to targeting media coverage, also makes it a media-centered model. Finally, it regards public acceptance of science and technology as simply a matter of overcoming resistance, from special interest groups, professional mediators such as journalists, or the lay public, by more and better (a) science diffusion, (b) media coverage, and (c) public understanding” (Maesele, 2013: 159).

Science and knowledge are important social values. Unfortunately, this undoubted fact is poorly understood by those who, by definition, must monitor the dynamics of value

orientations. The study of leading social values is one of the traditionally popular topics in sociological research. But the traditional list of values, which is offered to assess significance to respondents, almost never includes either, say, intelligence, or reason (or some of its recognized manifestations), or science as such. Education, intelligence, etc. are “forgotten”. In the proposed lists, one can see wealth, achievement (personal success), hedonism, independence, kindness, security, traditionality, conformity, etc. (Zagorodniy, 2022). It is possible that respondents mention intellectual values and intelligence itself in the “other” column, but it is difficult to judge, because this part of the reports, as a rule, is not characterized in more or less detail. It proves that effective promotion of the native intellectual values should be a special task at all levels of society and the state. Appropriate tasks could be performed by social advertising in the electronic media too. But, even a cursory reading of the existing manuals on social advertising showed that even there the values of intelligence, science and mental work do not find their proper place.

In the paper, we want to underline, that social architecture is changing, and science goes away from the traditional “ivory tower” model to the neoliberal one, where political roles, companies influences on science matters a lot: “So while traditional science communication only forces scientists into producing and disseminating the most grossly simplified versions of their work, completely lacking in intrinsic scientific value, it remains conceivable as essential practice for the role it is presumed to play in the preservation of genuine scientific authority in society” (Elam, 2004: 232). Using the framework of the communications revolutions, we can say about the “science communications revolutions”, following the ideas of Wolfgang Hofkirchner (2010), Vincenzo Politi (2018), and others.

Ethics of inclusiveness in the research field

At first glance, the academic sphere is quite closed: the higher the qualification level of a scientist, the more difficult it is to maintain communication with him at the appropriate level. However, at all levels of research excellence, an academician’s path to new research discoveries lies through his ability to establish successful interaction with colleagues, not push them away, but on the contrary, involve them in solving complex tasks. Moreover, the more difficult the research task to be solved, the more critically important it is not to lose the opportunity to attract the right participant to the implementation of the research project. At the same time, extra widening of the participation of the representatives from the “non-professional” (citizen science as involvement of the non-professional people to research activities) is a new challenge for the science as a social institute: “The achieved power of computer technology (as well as the possibility of a network combination of their power) creates the basis for processing such large data sets that were considered inaccessible for processing and understanding even yesterday. The need to overcome the isolation between the spheres of science, between science and the spheres of social existence, where science can prevent the growth of crime, help overcome hunger, ensure people’s access to clean water, a healthy environment, etc., is increasingly being realized. Involvement of the civic community in research, observations, and surveys is becoming a common practice. On the other side, we can say that the 21st century brings some interesting trends in science communication, which are a matter for future academic discussion... Public deliberation tendencies catalyze the development of popular science communication channels when professional researchers and profanes have the same “strong voices” in public discussions” (Kolesnichenko, 2023: 79).

Some ethics insist on deep moral relativism that leads to improbability of safe ethical judgments. So, American philosopher Dale Dorsey states: “Normative pluralism holds that

there is no such thing as a distinct set of rational requirements or “oughts” (distinct, that is, from individual “oughts” generated by the individual special standpoints such as morality, prudence, aesthetics, etc.)” (Dorsey, 2016: 19). However, we are convinced that this is not the death of morality, but it is the birth of a strong communicative morality in place of a weak individual morality. Thus, inclusiveness means an urgent need for science. But also, inclusiveness in science is the same concern for those who have special needs and for whom it is necessary to create additional facilities to include them in communication. Often, it is the maximum possible expansion of the circle of communication participants that makes it possible to find the right specialist where it was not expected to be found before: “Transgressions of discourse, outside of those that infringe on property rights, such as nonsequitur, begging the question, or other inappropriate kinds of discourse, while identified as unacceptable for post, are not accompanied by a mode by which to enforce such a rule (e.g., that which accompanies the rule about copyright). Thus, because inclusivity and equal distribution do not depend on cogent reasoning in this space, it actually lends itself to being a breeding ground of discourse that excludes or demonstrates inequitable opportunities to speak and to listen” (Coleman, 2015: 196). So, dialectics of traditions and innovations (especially, technically caused ones) in science communication still being a challenge for the axiology of science communication at the 21st century.

Thus, the second, so to speak, caring mission of inclusiveness helps to better reveal the main – research and creative goal of inclusiveness in science communication. Indian philosopher Geeta Kumar insists that “Much more than a policy requirement, Inclusion is founded upon a moral position which values and respects every individual and which welcomes diversity as a rich learning resource” (Kumar, 2018: 321). We stated that this moral position has also a strong epistemological justification.

To a certain extent, the last provision helps to better reveal those cute generalizations of psychological, sociological, historical, etc. studies of inclusiveness that were carried out by Austrian philosopher Franziska Felder who provides systemic in-depth analysis of the philosophical and moral significance of exclusion, and from an analytical point of view proposes the investigation of the value of inclusion and clarifies inclusive education and explores inclusive educational aims (Felder, 2022).

Moral practice needs moral communication, because individual moral position is inevitably weak. So, Dorsey states that “the practical authority of morality is limited, indeed. Not only does a moral obligation to ϕ not entail a normative obligation to ϕ , a moral obligation to ϕ does not even entail a moral permission to ϕ ” (Dorsey, 2016: 4). Moral communication helps radically overcome such limitations, as we can see. In this direction, there are also other ethical normative answers (Kagan, 2023; Risberg, 2023), but now we emphasize strong communicative normative overcoming of moral relativism in an academic field.

Conclusions

Science and science communication act as indisputable social values, and at the same time generate corresponding intellectual and instrumental values. The prestige of these values is an important condition for the development of science and education in society, a guarantee of the country’s sure progress in the direction of sustainable and inclusive growth. The source of fruitful science communication is the intelligence, which is the heart and reason, the condition for the existence of other communicative values. Intelligence realizes itself in cognitive activity, which expands and confirms new spaces and dimensions of freedom. Ethics based science communication shortens or completely eliminates all distances, creates new opportunities for

direct communication.

The values of science communication confirm the inclusiveness of this communication, the openness and availability of information, simplification and wide access for research participation, put forward new requirements regarding the responsibility of the researchers (research teams) for research results, etc. In contemporary society, there is still an underestimation of the values of science and, mainly, they are not perceived as priorities of the national development. Values of science communication allow to overcome many limitations of researches and help to revise the science social role on the local, regional, national and global level.

References

- Boichenko, N., and Z. Shevchenko (2020) Incompatibility or convergence: human life as capital. *Anthropological Measurements of Philosophical Research*, Vol. 17, 7–17. <https://doi.org/10.15802/ampr.v0i17.206660>
- Boychenko, M. (2010) The theory of action and the theory of communication as the ultimate justification of the system approach in social cognition. *Practical philosophy*, 1(35), 11-16 (in Ukrainian).
- Coleman, M. C. (2015) Courage and Respect in New Media Science Communication. *Journal of Media Ethics*, 30:3, 186-202. <https://doi.org/10.1080/23736992.2015.1050557>
- Dorsey, D. (2016). *The Limits of Moral Authority*. Oxford: Oxford University Press.
- Elam, M. (2004) Contemporary science communication as a world of political invention. *Science as Culture*, 13:2, 229-258. <https://doi.org/10.1080/0950543042000226620>
- Felder, F. (2022) *The Ethics of Inclusive Education Presenting a New Theoretical Framework*. Routledge.
- Habermas, J. (2023) *A New Structural Transformation of the Public Sphere and Deliberative Politics*. Polity Press.
- Hofkirchner, W. (2010) How to Design the Infosphere: the Fourth Revolution, the Management of the Life Cycle of Information, and Information Ethics as a Macroethics. *Knowledge, Technology & Policy*, 23(1-2): 177–192. <https://doi.org/10.1007/s12130-010-9108-6>
- Jary, D., and J. Jary (1995) *Collins Dictionary of Sociology*. Glasgow, Boston, Massachusetts: Collins Credo Reference.
- Kagan, S. (2023) *Answering Moral Skepticism*. Oxford University Press.
- Kolesnichenko, S. (2023) Communications Revolution: from Civilizational Phenomenon to Science Communication Perspectives. *Studia Warmińskie*, Vol. 60, 71–82. <https://doi.org/10.31648/sw.9564>
- Kumar, G. (2018) The Ethics of Inclusion. Kapur, V., & Ghose, S. (Eds) In *Dynamic Learning Spaces in Education*. Singapore: Springer, 319-334. https://doi.org/10.1007/978-981-10-8521-5_18
- Lisovyi, V. (2002) Value. In *Philosophical encyclopedic dictionary*. Edited by V. Shinkaruk. Kyiv: Abrys, 707-708 (in Ukrainian).
- Maesele, P. (2013) On Media and Science in Late Modern Societies. *Annals of the International Communication Association*, 37:1, 155-181. <https://doi.org/10.1080/23808985.2013.11679149>
- Mannan, M.A. (2020) Revolution Versus Evolution: The Pattern of Conceptual Change in Science. *Journal of Indian Council of Philosophical Research*, Vol. 37, 175–189. <https://doi.org/10.1007/s40961-020-00203-9>
- McLuhan, M. (1962) *The Gutenberg Galaxy: The Making of Typographic Man*. University of Toronto Press, Scholarly Publishing Division.

- Politi, V. (2018) Scientific revolutions, specialization and the discovery of the structure of DNA: toward a new picture of the development of the sciences. *Synthese*, Vol. 195, 2267–2293. <https://doi.org/10.1007/s11229-017-1339-6>
- Risberg, O. (2023) Ethics and the Question of What to Do. *Journal of Ethics and Social Philosophy*, 25:2, 1-51. <https://doi.org/10.26556/jesp.v25i2.1117>
- Zagorodniy, M. (2022) *What vital values are important for Ukrainians?* Available online: <https://life.pravda.com.ua/society/2022/08/24/250154/> (in Ukrainian)