



Original Research

Metaphor power and language typology: Analysis of correlation on the material of the United Nations Declarations

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The established approaches to language typology share the notion that the features used as a starting point for any classification are linguistic rather than discursive. This study aims to reveal the connection between typological characteristics of languages and linguacultural patterns of expressing metaphoric meaning in discourse. We seek to answer the question: is there a correlation between the way the human mind processes metaphors, and typological characteristics of languages in which those metaphors are verbalised? The research material includes the texts of the United Nations Millennium Declaration and A Universal Declaration on a Nuclear-Weapon-Free World in three languages – Russian, English and Chinese. The methodological framework is based on the quantitative analysis of indicators connected with language typology (synthesis, agglutination and isolation) and metaphor power in discourse. To determine the degree of text metaphorisation, we employed the Metaphor-driven discourse analysis (MDDA) based on the calculation of metaphor indices: Metaphor Density Index (MDI), Metaphor Intensity Index (MII), and Metaphor Functional Typology Index (MfTI). The study further juxtaposed the typology indices and metaphorisation indices to identify the correlation between the typology index values and metaphor power on the example of the UN Declarations in three languages. Research results indicate that isolating analytical languages tend to be more figurative than synthetic ones, which is reflected in higher metaphoric density, intensity of metaphor use and frequent employment of structural metaphors. The example of the Chinese language has demonstrated that its typological characteristics on the levels of graphics, word formation and syntactic structures act as prerequisites for metaphor use. The findings contribute to the understanding of the connection between fundamental frameworks of thinking, typological characteristics of languages and linguacultural patterns of expressing identical or similar meanings in discourse.

KEYWORDS: language typology, metaphor power, metaphoric density, metaphoric intensity, metaphoric function, speech impact



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1. INTRODUCTION

People's aptitude to categorise world experiences by means of language is viewed as one of the most essential human cognitive abilities. This accounts for the scholars' continuous interest in language typology and its connection with fundamental frameworks of thinking. To date, the most well-known subfields of this discipline are phonological, morphological, lexical, syntactical and semantic typologies, each instrumenting their specific methods and approaches. According to Koptjevskaja Tamm (2007), the huge and complex task of comparing languages requires a truly integrating approach, where morphological, phonetic and 'semantic criteria as well as psycholinguistic considerations and sociolinguistic/pragmatic factors are all relevant' (Kopt-

jevskaja Tamm, 2007, p. 160). The purpose of this paper is to examine the correlation between the typological characteristics of languages and their predisposition to metaphorical expression. Study material includes the texts of the *United Nations Millennium Declaration* (United Nations, 2000) and *A Universal Declaration on a Nuclear-Weapon-Free World* (United Nations, 2019) in three languages – Russian, English and Chinese.

The foundations of typological classification and linguistic comparative analysis were laid by Schlegel (1808). Further endeavours to tackle the problem were made by Humboldt (1836), Schleicher (1876), Steinthal & Misteli (1881). Later, in the 20th century, a number of typological classifications were proposed by Greenberg (1974), Uspensky (1965), Melnikov

'Most scholars nowadays agree that metaphor is a distinctive phenomenon which is simultaneously linguistic, cognitive and culture specific. It denotes a conceptual shift, or 'twist', and in its essence is a figure of speech which reflects cultural, historical, ethnic, national and supranational values. The regularities of metaphoric expression in a particular language are attributable to its peculiarities and characterise the ethnolinguistic personality as part of an individual's speech portrait'

(2014), Martinet (1962) and others. The pioneers of classifying Asian languages were Solncev (1995) and Li & Thompson (1976). The established approaches to language typology share the notion that the features always used as a starting point for any classification are linguistic rather than speech peculiarities, systemic features as opposed to discursive characteristics: the phonological typology is based on patterns of sound systems, including binary sound oppositions; the morphological typology groups languages according to their predominant morphological structures; and the syntactical typology proceeds from the verbal actants and word order. However, given the current interest in the interrelation between language, culture and communication (see Klyukanov & Leontovich, 2017; Grigoryev, 2022; Grigoryev & Komyaginskaya, 2023) and feeding from the achievements in discovering profound connections in the anthropological 'language-culture-conscience' triad, it is only natural for typological classifications to take into account cultural and cognitive factors. This said, we do not see our endeavour as an attempt to create a new typology or challenge the established approaches, but rather as an effort to reveal the connection between typological characteristics of languages and linguacultural patterns of expressing identical or similar meanings with the help of lexical units and grammatical forms of a particular language in discourse.

2. MATERIAL AND METHODS

The nature of metaphor and its role in cognition have long been debated by representatives of different schools of thought (Gentner & Wolff, 1997; Lakoff & Johnson, 1980; Levin, 1977; Murphy, 1996; Searle, 1979). Attitudes towards the way metaphors are processed by the human mind range from cognitive linguists who believe that *'our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature'* (Lakoff & Johnson, 1980, p. 4) to non-cognitivist (Davidson, 1978) who *'reject the notion of metaphorical meaning altogether'* (Camp, 2006, p. 155).

Most scholars nowadays agree that metaphor is a distinctive phenomenon which is simultaneously linguistic, cognitive and culture specific (see Kozlova, 2020; Abdelhameed et al., 2023). It denotes a conceptual shift, or 'twist', and in its essence is a figure of speech which reflects cultural, historical, ethnic, national

and supranational values. The regularities of metaphoric expression in a particular language are attributable to its peculiarities and characterise the ethnolinguistic personality (Klyukanov & Leontovich, 2017) as part of an individual's speech portrait (Kalinin & Ignatenko, 2022; Malyuga & McCarthy, 2020; Malyuga & McCarthy, 2021). They play an important role in fiction (Ignatenko, 2022), politics (Ignatenko & Dorofeeva, 2022) and media discourse (Leontovich & Kotelnikova, 2022).

In this article, we seek to answer the question: is there a correlation between the way the human mind processes metaphors and typological characteristics of languages in which those metaphors are verbalised, in terms of metaphoric density, metaphoric intensity and metaphor power? The material of the study includes the texts of the *United Nations Millennium Declaration* (United Nations, 2000) in three languages: Russian (2,941 words), English (3,230 words) and Chinese (3,099 words); and *A Universal Declaration on a Nuclear-Weapon-Free World* (United Nations, 2019) in Russian (1,185 words), English (1,313 words) and Chinese (1,219 words). These texts have been selected for analysis because they are not only identical from the semantic, structural and stylistic points of view, but have also been verified by the expert community of high-class translators, which provides us with an opportunity to carry out a comparative analysis of metaphors in the given texts, with a zero influence of paralinguistic and pragmatic factors. Both Declarations were proposed by Kazakhstan and originally formulated in Russian, therefore in the course of the analysis we will proceed from the Russian variant as a starting point.

The methodological framework is based on the quantitative analysis of indicators connected with language typology and the analysis of the discursive characteristics of metaphorisation. It includes the following successive steps: (1) identification of basic typological characteristics of the three languages (Russian, English, Chinese); (2) identification of metaphors in the texts under analysis; (3) identification of the level of metaphorisation of the texts; (4) juxtaposition of typology indices and metaphorisation indices; (5) analysis of results and detection of regularities. The overview below describes the implementation of these steps.

Step 1. Identification of basic typological characteristics of the three languages (Russian, English, Chinese). This stage of the analysis involved detecting the most significant morphological and syntactical characteristics of the languages under study. We are aware of the fact that any typological differentiation is to a certain degree tentative, as various signs of convergence can appear in analytical languages, whereas fusion and agglutination can be incorporated in isolating languages. Such claims rest on the substantial foundations of Solncev's (1995, p. 9) research suggesting that the example of modern Chinese as a classical representative of isolating languages proves that agglutinative morphology can exist within the isolating language structure. Solncev (1995) also indicates that the macrotype of isolating languages predominantly includes the agglutinative type morphology and analytical forms, while some languages display elements of fusion, as well as incorporation (Solncev, 1995, p. 12).

In this research, we adopt Greenberg's (1960) approach further refined by Kasevich (2009) and based on the reduction to numerical indicators of Sapir's typological postulates calculated per a certain amount of text. Nowadays, the list of indicators for the calculation of typological characteristics has been extended. This study predominantly focuses on the dependency between the structure of the linguistic system and the level of metaphorisation of a given discourse created in a particular language. Therefore, our data are grounded in the main quantitative indicators allowing us to reveal the morphological and syntactical characteristics of the languages under study calculated according to the following formulae (Greenberg, 1960): (1) synthesis index M/W , where M stands for the number of morphemes and W – for the number of words in a given text size (100 words); (2) agglutination index A/J , where A stands for the number of agglutinative constructions and J – for the number of morpheme junctions; (3) index of isolation, inflexion and agreement O/N , Co/N , Pi/N , where O stands for word order, Co – for agreement, Pi – pure inflexion, and N – for the number of uses of a particular type of word connection in a sentence.

Step 2. Identification of metaphors in the texts under analysis. To find metaphors in texts analysed, we employed the metaphor identification procedure designed by Deignan (2015) and Nacey et al. (2019). The essence of the procedure is the detection of metaphors by means of identifying incongruencies between basic and contextual lexical meanings. It should be noted that this methodological procedure presupposes a double check of the revealed incongruencies, namely their reconciliation with dictionary meanings, as well as data from the national language corpora. Therefore, it is nowadays considered to be the most valid methodology for identifying metaphoric shifts. In our study, the procedure which was originally designed for English is adjusted to Russian and Chinese, which constitutes a new step in its practical application.

Step 3. Identification of the level of metaphorisation of the texts. Metaphoric density is a discursive criterion realised in the form of functional potential and intensity of concrete metaphors projected onto a particular discourse. It is conditioned by the pragmatic and cultural setting of communication. To determine the degree of text metaphorisation, we employed the Metaphor-Driven Discourse Analysis (MDDA) suggested by Kalinin (2021) and based on the calculation of metaphor indices: Metaphor Density Index (MDI), Metaphor Intensity Index (MII), and Metaphor Functional Typology Index (MfTI) (Sun et al., 2021; Kalinin et al., 2022). Metaphoric density in a text is directly connected with speech impact because, when generating a message, authors subconsciously try to use more metaphors describing a standpoint they support, which has been consistently argued by De Landtsheer (2009), Mio et al. (2005), and Hussey and Katz (2006). On the other hand, cognitive distortion acts as a mechanism of manipulation (Ignatenko & Dorofeeva, 2022).

To calculate metaphoric density, we used the Metaphor Density Index (MDI) = $nme * 100/nwords$, where nme stands for the number of metaphors and $nwords$ – for the number of words

per text. This index reflects the average number of metaphors per 100 words (Sun et al., 2021; Kalinin, 2021). Metaphoric intensity is seen as a dichotomy of conventional and authorial (novel) figures of speech. This amalgam is based on the intensity of structural and emotional tension. Conventional and novel metaphors are usually seen as an opposition invoked by the difference between their cognitive mechanisms; they produce different effects on the recipient. While generally accepted metaphors reduce the complexity of text perception, novel metaphors affect the recipient's imagination and augment the emotive appeal of the utterance. In order to calculate the metaphoric intensity, we used the Metaphor Intensity Index $MII = (1 * w + 2 * a + 3 * s) / nme$, where w denotes the number of low-intensity (trite, conventional) metaphors, a – the number of medium-intensity metaphors, and s – the number of high-intensity (neological, or authorial) metaphors (Sun et al., 2021; Kalinin, 2021).

Metaphors were famously classified by Lakoff and Johnson (1980) as structural (in which a complex object, usually abstract, is presented in terms of another, usually concrete), orientational (organising a system of concepts with respect to one another in space), and ontological (presenting experiences in terms of objects and substances). They perform different functions in discourse and presumably have different types of linguistic representation. Therefore, their quantitative analysis can be viewed as one of the indications of metaphor power and the domineering function of metaphor in discourse.

Proceeding from the classification above, we propose a method of calculating the metaphor functional typology index, which reflects the average value of all metaphors in discourse and can thus serve for the in-depth analysis of metaphor power. The calculation of this index provides a convenient way to reveal the quantitative distribution of orientational, ontological and structural metaphors: $MfTI = (1 * Or + 2 * O + 3 * St) / nme$, where Or indicates the number of orientational metaphors, O – the number of ontological metaphors, St – the number of structural metaphors, and nme – the overall number of metaphors in a text (Sun et al., 2021; Kalinin, 2021).

Step 4. Juxtaposition of typology indices and metaphorisation indices involved the research of the correlation between the typology index values (synthesis, agglutination, isolation) and metaphor power in discourse on the example of the UN Declarations in three languages.

Step 5. Analysis of results and detection of regularities allowed us to sum up the data we obtained in the course of the research and make conclusions about the predisposition of typologically different languages to metaphoric expression, the regularities of metaphor use and their potential impact in discourse.

3. STUDY RESULTS

Based on the previous research of the Russian, English and Chinese languages, we have summed up their most relevant typological characteristics, such as language type, type of morphological structure, coding strategy and basic word order (Table 1).

Table 1
Typology of Russian, English and Chinese languages

LANGUAGE	LANGUAGE TYPE	TYPE OF MORPHOLOGICAL STRUCTURE	STRATEGY OF CODING VERB ACTANTS	BASIC WORD ORDER
Russian	Primarily synthetic	Inflectional	Nominative	SVO
English	Primarily analytical	Inflectional	Nominative	SVO
Chinese	Primarily analytical	Isolating	Active	SVO

We have further used Greenberg's (1960) methodology and analysed 100-word fragments of the texts in each language to calculate the numerical indicators of the levels of synthetic correlations and agglutination, and, correspondingly, 10 sentences in each language to calculate the numerical indicators of isolation. Importantly, any quantitative analysis of Chinese words is invariably connected with the problem of word delimitation. In our study, we adhere to the approach, well-established in Rus-

ian sinology, according to which a Chinese morpheme is a minimal meaningful linguistic unit, a minimal combination of sound and meaning and the main word-formation element (Solncev, 1995, p. 98). Chinese linguists emphasise that the difference between morphemes and words is that the latter can be used independently (Fang, 2016, p. 70). With these theoretical assumptions in mind, we have identified the typology indices for synthesis, agglutination and isolation (Table 2).

Table 2
Typology index values (synthesis, agglutination, isolation)

LANGUAGE	SYNTHESIS INDEX	AGGLUTINATION INDEX	ISOLATION INDEX (O:Co:Pi)
Russian	2,08	0,32	0,09:0,21:0,68
English	1,23	0,37	0,73:0,17:0,1
Chinese	1,03	0	1:0:0

The numerical values demonstrate significant differences in the morphological and syntactical language structures: from high level of synthesis and well-developed flectivity in Russian to isolating analytism in Chinese. The next stage of analysis dealt

with the metaphoric power of the two UN Declarations (*United Nations Millennium Declaration* and *A Universal Declaration on a Nuclear-Weapon-Free World*) in Russian, English and Chinese as our research material. The results are shown in Table 3.

Table 3
Results of the metaphoric power analysis in the Russian, English and Chinese UN Declarations

TEXT	SIZE	MDI	MII	MfTI
United Nations Millennium Declaration (Russian)	2941	1,63	1,13	2,1
United Nations Millennium Declaration (English)	3230	1,73	1,14	2,12
United Nations Millennium Declaration (Chinese)	3099	1,85	1,13	2,13
A Universal Declaration on a Nuclear-Weapon-Free World (Russian)	1185	1,6	1	2
A Universal Declaration on a Nuclear-Weapon-Free World (English)	1313	0,76	1	2
A Universal Declaration on a Nuclear-Weapon-Free World (Chinese)	1219	1,81	1	2

'Study results show that of the total number of metaphors identified in the two UN declarations (67 in Russian, 75 in English and 80 in Chinese), 12 discrepancies have been discovered in the Russian-English pair, 14 discrepancies – in the Russian-Chinese pair, and 16 discrepancies in the English-Chinese pair. The analysis indicates that those discrepancies are mostly typical of trite metaphors, ontological in character'

The numerical indicators show that there is an insignificant difference between the texts only in the MDI index, which points to a small difference in the number of metaphors, while the values of metaphor intensity (MI) and average metaphor function indices (MfTI) are practically identical.

The study will further take a closer look at the similarities and differences in the use of metaphors in the UN documents.

(1) *Мы преисполнены решимости установить справедливый и прочный мир во всем мире в соответствии с целями и принципами Устава* (lit. *We are filled with the determination to establish a just and solid peace all over the world in accordance with the purposes and principles of the Charter*).

We are determined to establish a just and lasting peace all over the world in accordance with the purposes and principles of the Charter.

我们决心根据《宪章》的宗旨和原则，在全世界建立公正持久的和平 (lit. *We have decided to build a just and lasting peace all over the world in accordance with the purposes and principles of the Charter*).

Across the three languages *peace* is metaphorically presented as an object of construction. Moreover, the Russian image of *solid peace* depicts it as something sturdy and durable, which we view as an ontological metaphor. Besides, the Russian phrase *преисполнены решимости* ('filled with the determination') is a conventional verbal metaphor where the actors are conceptualised as containers filled with a certain emotion or intention.

(2) *Мы приложим все усилия к тому, чтобы освободить наши народы от бедствий войн* (lit. *We will make every effort to free our peoples from the calamities of wars*).

We will spare no effort to free our peoples from the scourge of war.

我们将竭尽全力，使我们的人民免于战祸 (lit. *We will make efforts so that our peoples could rid themselves of the sufferings of war*).

Whilst the focus of the Russian and English sentences is on war as a calamity depriving people of freedom (an ontological metaphor), the Chinese phrase presents it as a source of suffering. The English variant also contains the trite metaphor *scourge of war* etymologically linked to the act of whipping.

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in the Russian-English pair, 14 discrepancies – in the Russian-Chinese pair, and 16 discrepancies in the English-Chinese pair. The analysis indicates that those discrepancies are mostly typical of trite metaphors, ontological in character. Metaphors with a medium level of intensity or those reflecting a structural shift were expressed identically. Metaphors with a stronger pragmatic potential preserved it in the texts of the Declarations in the three languages, which can be seen in the examples below.

(3) *Различия в рамках обществ и между обществами не должны ни пугать, ни служить поводом для преследований, а должны пестоваться в качестве ценнейшего достояния человечества* (lit. *Differences within and between societies should not scare or act as a cause of repressions, but should be cherished as a most precious asset of humanity*).

Differences within and between societies should be neither feared nor repressed but cherished as a precious asset of humanity.

不应害怕也不应压制各个社会内部和社会之间的差异，而应将其作为人类宝贵资产加以爱护 (lit. *We should not be afraid of or suppress differences within societies or between them but should rather cherish them as a precious asset of humanity*).

Across the three languages social differentiation acquires the conceptual characteristics of an 'asset' or inheritance that must be valued. We believe that this is the realisation of the structural shift 'SOCIETY (and its structure) > ASSET'. This medium intensity metaphor is similarly realised in all the three languages.

(4) *Пользуясь этой исторической возможностью, мы вновь торжественно заявляем о том, что Организация Объединенных Наций является незаменимым общим домом для всего человечества* (lit. *Using this historic opportunity, we solemnly reaffirm that the United Nations is the indispensable common house of the entire humanity*).

We solemnly reaffirm, on this historic occasion, that the UN is the indispensable common house of the entire human family.

在此具有历史意义的盛会，我们庄重新申，联合国是整个人类家庭不可或缺的共同殿堂 (lit. *On this historic occasion we solemnly reaffirm that the United Nations is the indispensable common hall for the entire humanity*).

This example is an illustration of a structural metaphor of medium intensity where a public organisation acquires the conceptual features of a house or hall and a habitat for family accommodation. The metaphor 'UN is a COMMON HOUSE' is realised via the selection of a full semantic equivalent.

(5) *<...> обеспечивать надежный приток ресурсов для миротворческих операций на континент* (lit. *to ensure a reliable flow of resources for peacekeeping operations on the continent*).

<...> to ensure a reliable flow of resources for peacekeeping operations on the continent.

<...> 维持和平行动获得可靠的资源流入 (lit. *peacekeeping operations receive a reliable flow of resources*).

The image 'SUPPLY OF RESOURCES' as a 'FLOW' is a structural metaphor existing as a cliché in all the three languages. In the next example we see a variation of the same metaphor, which, however, acquires some culturally specific flavour.

(6) <...> тем самым вовлекая Африку в основное русло развития мировой экономики (lit. <...> thereby involving Africa in the main tideway of world economy).

<...> thereby bringing Africa into the mainstream of the world economy.

<...> 从而将非洲纳入世界经济的主流 (lit. thereby integrating Africa into the mainstream of the world economy).

The English 'mainstream' does not have an exact equivalent in Russian, due to which Russian has acquired the word 'мейнстрим' as a borrowing. In this case, however, it employs the image of a river tideway widely used as a trite metaphor.

Let us further take a look at the summary numbers of indices of density, intensity and functional typology in both UN Declarations in the three languages (Table 4).

Table 4
Summary results of metaphor power in the two UN Declarations in Russian, English and Chinese

TEXTS OF UN DECLARATIONS	SIZE	MDI	MII	MfTI
Russian	4126	1,62	1,07	2,07
English	4543	1,65	1,1	2,09
Chinese	4338	1,84	1,1	2,1

The numbers indicate that the identical UN Declarations in the three languages display a difference in the metaphoric density index (MDI), with a deviation especially noticeable in Chinese, while other differences are insignificant. The metaphor intensity indices (MII) and the functional typology indices (MfTI) are almost identical. The average MII value in the two declarations (1,07 for Russian and 1,1 for both English and Chinese) indicate that the majority of the analysed metaphors are trite conventional ones verbalised in the form of clichés typical of official

document style. The average distribution of metaphors according to their functions is reflected in the MfTI value (2,07 for Russian, 2,09 for English and 2,1 for Chinese), which reflects the predominantly ontological character of metaphors used in the UN Declarations and testifies to the expected low level of potential speech impact.

To compare the values of typology and metaphor power, we have carried out the correlation analysis represented in Table 5 below.

Table 5
Results of the correlation of typology and metaphor power indices

TYPOLOGY	MDI	MII	MfTI
Synthesis	-0,737933	-0,9837827	-0,9882981
Agglutination	-0,9686841	-0,3882582	-0,6685178
Isolation	0,80914106	0,95737398	0,99918216

The regularity is reflected in the correlation of the agglutination and metaphor density indices (-0,96), isolation and metaphor density indices (0,8), synthesis and metaphors intensity indices (-0,98), isolation and metaphors intensity indices (0,95), synthesisism and functional metaphor typology indices (-0,98), as well as isolation and functional metaphor typology indices (0,99). We believe that the most significant result is the correlation between isolation and realisation of metaphor power: the higher the degree of isolation, the more metaphors are used in a text and the more intensive they are. Figures show that isolation is also connected with the type of metaphors: in isolating Chinese there are more structural type metaphors. Agglutination, i. e. the formation of grammatical forms and derivatives by

means of linking affixes with grammatical or derivational meanings to a root or stem, is also connected with metaphor density: the higher the level of agglutination, the fewer metaphors are revealed. Synthesis, on the other hand, shows a reverse correlation: the lower the level of synthesis, the more frequent is the use of vivid structural metaphors.

In general, our research indicates that on average the isolating Chinese is more metaphorical, at least in terms of metaphor density, which, as we showed earlier, is reflected in political, business and media discourses (Guruleva & Kalinin, 2021, p. 31). In this connection, it is necessary to give an additional explanation of the typological peculiarities of Chinese and their potential connection with higher metaphor density.

'The numbers indicate that the identical UN Declarations in the three languages display a difference in the metaphoric density index (MDI), with a deviation especially noticeable in Chinese, while other differences are insignificant'

The graphic imagery of Chinese writing, which in its essence is pictographic (象形字 – lit. character-image), accounts for the intenseness of metaphorisation in Chinese. Pictography is based on associations and reflects the metaphoric connection between humans and nature. According to Fang (2016, p. 4), an 'image form' is not merely a copy of a natural object, but rather its image that becomes the basis for the creation of a character.

Lin (2020) points out that by means of creating pictograms, the Chinese people 'transferred and consolidated in their history the specifics of the human perception of natural objects and phenomena. By the same token, the development of writing happened by means of the creation of new characters expressing new notions', alongside the development of the human mind, technical and cultural progress (Lin, 2020, p. 24). According to Lin (2020), all types of Chinese characters in many ways reflect metaphorical thinking: (1) pictograms, as in 'tree' (木) the horizontal line symbolises the earth, the vertical one – a trunk, and the left and right slashes turn a tree into an ear of grain (禾); (2) ideograms are formed as a sum of several characters, as in the sum of three graphemes 车 ('cart') produces 'rumble' 轰 (轟), whereas the combination of 艹 'grass' and 田 'field' forms 苗 'seedlings', 'sprout'; (3) phonoideograms consist of two parts, the first one expressing the meaning of the character, and the second one – its pronunciation; for example, the element 氵 'water' almost always indicates that the meaning of the character is connected with water, e. g. 海 'sea', 河 'river', 渴 'be thirsty'. Emphasising the iconicity of Chinese writing, Lin (2020, p. 22) argues that Chinese characters are iconic signs 'concealing a whole thought or an independent plot'.

Chinese word formation, with compounding as its leading type, does not only happen as a linkage of monosyllabic morphemes, but often as a re-conceptualisation based on a metaphoric shift. For example, the concept 'democracy' is expressed by means of the lexeme 民主 ('lit. 'people' and 'master'), which accounts for the change in the perception of this notion and, besides, involves a metaphoric shift (perception of power through the source sphere 'master') (Guruleva & Kalinin, 2021, p. 35). The existence of numerous idioms also contributes to the metaphoric power of Chinese discourse. All these typological peculiarities of Chinese in a way encourage its users to adopt metaphorical thinking and speaking.

The example below illustrates the Chinese tendency towards greater metaphoric density than in Russian and English, even when dealing with clichés and trite metaphors.

(7) Мы приложим все усилия к тому, чтобы превратить Организацию Объединенных Наций в более эффективный инструмент для решения всех этих перво-

очередных задач: борьбы за развитие для всех народов мира, борьбы с нищетой, невежеством и болезнями; борьбы с несправедливостью; борьбы с насилием, террором и преступностью; и борьбы с деградацией и разрушением нашего общего дома (lit. We will make every effort to turn the United Nations into a more effective instrument for pursuing all these high-priorities tasks: the fight for development for all the peoples of the world, the fight against poverty, ignorance and diseases; the fight against injustice; the fight against violence, terror and crime; and the fight against the degradation and destruction of our common house).

We will spare no effort to make the United Nations a more effective instrument for pursuing all of these priorities: the fight for development for all the peoples of the world, the fight against poverty, ignorance and disease; the fight against injustice; the fight against violence, terror and crime; and the fight against the degradation and destruction of our common house.

我们将不遗余力使联合国成为致力实现以下所有优先事项的更有效工具: 努力使全世界所有人民实现发展, 战胜贫穷、无知和疾病; 维护正义; 打击暴力、恐怖和犯罪; 以及防止我们的共同家园出现退化和受到破坏 (lit. We will use all our strength to make the United Nations an effective instrument, which will do its best to pursue the following priorities: use every effort to make the people of the world realise development, fight poverty, ignorance and disease, protect justice, beat violence, terrorism and crime, as well as prevent the degradation and destruction of our common house the UN).

The example shows that while the Russian and English versions use the same metaphor 'fight' throughout the second part of the phrase, the Chinese text contains a variety of metaphors: 'fight', 'beat', 'prevent', etc. The metaphor power of the text is further enhanced by the use of Chinese iconic characters.

4. CONCLUSION

The research, which aimed to explore the correlation between typological characteristics of the Russian, English and Chinese languages and metaphor use in texts, has revealed a certain regularity reflected in the connection between the degree of isolation of morphological systems, degree of synthesis and agglutination, on the one hand, and metaphor power, on the other. In the most general terms, it can be formulated in the following way: the fewer morphological changes and grammatical forms are used to express meaning, the more space is left for the use of metaphors. We previously showed the connection of metaphor power predominantly with speech impact, pointing out the special persuasiveness of metaphoric expression (Sun et al., 2021; Kalinin, 2021) and indicating that the higher the value of metaphoric indices, the more persuasive is a speech message and the greater is the influence of discourse. The comparison of metaphor power of the two UN Declarations in three languages identical in their extralinguistic and pragmatic characteristics shows that the use of metaphors is not only connected with the author's intention to make an impact on the recipient. In some cases, conventional and even novel metaphors used in one lan-

guage are not necessary in the other, whereas the semantics and pragmatics of the text remain the same. At first sight, such examples seem to be isolated uses of particular lexical forms in a particular language and therefore inconsequential. However, it would be unfair to ignore the interconnection between different levels of the linguistic system: vocabulary does not exist apart from grammar; morphology, in its turn, determines the correlation between concepts represented in the vocabulary. Even though the level of morphology is less dynamic and changes slowly and even though its correlation with meaning-making is not direct but rather mediated by the lexical level, this connection cannot be denied.

Our analysis has demonstrated that isolating analytical languages tend to be more figurative than synthetic ones, which is reflected in higher metaphoric density, intensity of metaphor use and frequent employment of structural metaphors. The example of the Chinese language has demonstrated that its typological characteristics on the levels of graphics, word formation and syntactic structures act as prerequisites for metaphor use.

The research presented in this paper has demonstrated a certain interconnection between the typological characteristics

of the Russian, English and Chinese languages at different levels and the regularities of metaphor use in texts. The quantitative data and subsequent analysis have shown the potential correlation between isolation, synthesis, agglutination and figurative language use on the example of two UN Declarations identical in content, extralinguistic and pragmatic characteristics.

We are aware of the fact that, due to the complexity of the Russian, English and Chinese languages, we cannot claim to cover all the aspects and regularities of metaphor formation and use. Besides, the choice of only three languages for the correlational analysis is insufficient for far-reaching conclusions. Other limitations of the research are possible biases in the selection of materials for analysis, the inherent subjectivity of metaphor identification, as well as the necessity to take into account the social, cultural and political contexts in which languages are used. However, the proposed analysis provides a framework that could be extended in the future.

The results obtained in the study can set a trend, which can be of value for further productive research in this domain on the example of different types of discourse and a wider variety of languages.

References

- Abdelhameed, S., Alefirenko, N. F., & Shakhputova, Z. K. (2023). Ethno-cultural aura of language images in the light of cognitive linguistics. *RUDN Journal of Language Studies, Semiotics and Semantics*, 14(1), 189-207. <https://dx.doi.org/10.22363/2313-2299-2023-14-1-189-207>
- Camp, E. (2006). Metaphor in the mind: The cognition of metaphor. *Philosophy Compass*, 1(2), 154-170.
- Davidson, D. (1978). What metaphors mean. *Critical Inquiry*, 5(1), 31-47. <https://dx.doi.org/10.1086/447971>
- Deignan, A. (2015). MIP, the corpus and dictionaries: What makes for the best metaphor analysis? *Metaphor and the Social World*, 5(1), 145-154. <https://dx.doi.org/10.1075/msw.5.1.09dei>
- Fang, X. (2016). Morpheme and word in Chinese and Indo-European languages: A comparative analysis. *Vestnik BDU: Filologiya, Zhurnalistika, Pedagogika*, 3, 67-70.
- Gentner, D., & Wolff, P. (1997). Alignment in the processing of metaphor. *Journal of Memory and Language*, 37(3), 331-355.
- Greenberg, J. H. (1960). A quantitative approach to the morphological typology of language. *International Journal of American Linguistics*, 26(3), 178-194. <https://dx.doi.org/10.1086/464575>
- Greenberg, J. H. (1974). *Language typology: A historical and analytic overview*. De Gruyter Mouton.
- Grigoryev, D. S. (2022). Cognitive and motivational foundations underlying acculturation expectations: Applications of ethnic group position model. *RUDN Journal of Psychology and Pedagogics*, 19(1), 86-109. <https://dx.doi.org/10.22363/2313-1683-2022-19-1-86-109>
- Grigoryev, D. S., & Komyaginskaya, E. S. (2023). Intergroup contact and personal and cultural stereotypes in intercultural relations: A case of the stereotype content in Moscow for Belarusians, Chinese, Uzbeks, and Chechens. *RUDN Journal of Psychology and Pedagogics*, 20(1), 41-66. <https://dx.doi.org/10.22363/2313-1683-2023-20-1-41-66>
- Guruleva, T. L., & Kalinin, O. I. (2021). Metaphoric power as a culturally determined characteristic of discourse. *Current Issues in Philology and Pedagogical Linguistics*, 3, 26-40.
- Humboldt, W. (1836). *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluss auf die geistige Entwicklung des Menschengeschlechts*. Berlin: F. Dümmler.
- Hussey, K. A., & Katz, A. N. (2006). Metaphor production in online conversation: Gender and friendship status. *Discourse Process*, 42(1), 75-98. https://dx.doi.org/10.1207/s15326950dp4201_3
- Ignatenko, A. V. (2022). Features of the language game in Liu Zhenyun's prose on the example of the novel 'I am not Pan Jinlian'. *Vestnik of Saint Petersburg University. Asian and African Studies*, 14(3), 507-523. <https://dx.doi.org/10.21638/spbu13.2022.308>
- Ignatenko, A. V., & Dorofeeva, E. A. (2022). Political metaphors in the context of stereotyping and cognitive distortions. *Political Linguistics*, 3(93), 27-38.
- Kalinin, O. I. (2021). Quantitative analysis of metaphors as a way to identify cognitive-speech effects. *Cognitive Studies of Language*, 4(47), 327-334.
- Kalinin, O. I., & Ignatenko A. V. (2022). Comparative analysis of the use of metaphors in Russian, English and Chinese media texts of informational and influencing nature. *RUDN Journal of Language Studies, Semiotics and Semantics*, 13(4), 1062-1082. <https://dx.doi.org/10.22363/2313-2299-2022-13-4-1062-1082>
- Kasevich, V. B. (2009). On quantitative-typological indexes for the characteristics of Oriental languages. *Vestnik of Saint Petersburg University. Asian and African Studies*, 3, 123-142.
- Klyukanov, I., & Leontovich, O. A. (2017). The handbook of communication in cross-cultural perspective. In D. Carbaugh (Eds.), *Intercultural Communication Association handbook series* (pp. 29-41). Routledge Press. <https://dx.doi.org/10.4324/9781315709321>

- Koptjevskaja Tamm, M. (2007). Typological approaches to lexical semantics. *Linguistic Typology*, 11, 159-185.
- Kozlova, L. A. (2020). Metaphor as the reflection of culture determined cognition. *Russian Journal of Linguistics* 24(4), 899-925. <https://doi.org/10.22363/2687-0088-2020-24-4-899-92>
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. University of Chicago Press.
- Landtsheer, C. D. (2009). Collecting political meaning from the count of metaphor. In A. Musolff, & J. Zinken (Eds.), *Metaphor and discourse* (pp. 59-78). Palgrave Macmillan. https://dx.doi.org/10.1057/9780230594647_5
- Leontovich, O., & Kotelnikova, N. (2022). A semiotic portrait of a big Chinese city. *Russian Journal of Linguistics*, 26(3), 701-720. <https://dx.doi.org/10.22363/2687-0088-31228>
- Levin, S. (1977). *The semantics of metaphor*. Johns Hopkins University Press.
- Li, C. N., & Thompson, S. A. (1976). *Subject and topic: A new typology of language*. Academic Press.
- Lin, X. (2020). *The specifics of the evaluative metaphor in Russian and Chinese (based on the texts of political discourse)*. Moscow State Linguistic University Press.
- Malyuga, E. N., & McCarthy, M. (2020). Non-minimal response tokens in English and Russian professional discourse: A comparative study. *Voprosy Jazykoznanija*, 4, 70-86. <https://dx.doi.org/10.31857/0373-658X.2020.4.70-86>
- Malyuga, E. N., & McCarthy, M. (2021). 'No' and 'net' as response tokens in English and Russian business discourse: In search of a functional equivalence. *Russian Journal of Linguistics*, 25(2), 391-416. <https://dx.doi.org/10.22363/2687-0088-2021-25-2-391-416>
- Martinet, A. (1962). *A functional view of language*. Clarendon Press.
- Melnikov, G. P. (2014). *System typology of languages*. Lenand.
- Mio, J. S., Riggio, R. E., Levin, S., & Reese, R. (2005). Presidential leadership and charisma: The effects of metaphor. *The Leadership Quarterly*, 16(2), 287-294.
- Murphy, G. L. (1996). On metaphoric representation. *Cognition*, 60(2), 173-204. [https://dx.doi.org/10.1016/0010-0277\(96\)00711-1](https://dx.doi.org/10.1016/0010-0277(96)00711-1)
- Nacey, S., Dorst, A. G., Krennmayr, T., Reijnierse, W. G., & Steen, G. G. (2019). MIPVU in multiple languages. In S. Nacey, A. G. Dorst, T. Krennmayr, & W. Gudrun Reijnierse (Eds.), *Metaphor identification in multiple languages: MIPVU around the world* (pp. 2-21). John Benjamins Publishing Company.
- Schlegel, F. W. (1808). *Über die Sprache und Weisheit der Indier: Ein Beitrag zur Begründung der Alterthumsfunde*. M&Z.
- Schleicher, A. (1876). *Compendium der vergleichenden Grammatik der indogermanischen Sprachen*. Weimar.
- Searle, J. (1979). *Metaphor. Expression and meaning: Studies in the theory of speech acts*. Cambridge University Press.
- Solncev, V. M. (1995). *Introduction to the theory of isolating*. Vostochnaya Literatura RAN.
- Steinthal, H., & Misteli, F. (1881). *Abriss der Sprachwissenschaft*. Harrwitz und Gossmann.
- Sun, Y., Kalinin, O. I., & Ignatenko, A. V. (2021). The use of metaphor power indices for the analysis of speech impact in the political public speeches. *Russian Journal of Linguistics*, 25(1), 250-277. <https://dx.doi.org/10.22363/2687-0088-2021-25-1-250-277>
- United Nations. (2000). Millennium Summit of the United Nations. *United Nations*. <https://un.org/en/development/devagenda/millennium.shtml>
- United Nations. (2019). Universal Declaration on the Achievement of a Nuclear-Weapon-Free-World. In *United Nations Disarmament Yearbook* (pp. 139-143). United Nations. <https://dx.doi.org/10.18356/af98271e-en>
- Uspensky, B. A. (1965). *Structural typology of languages*. Nauka.