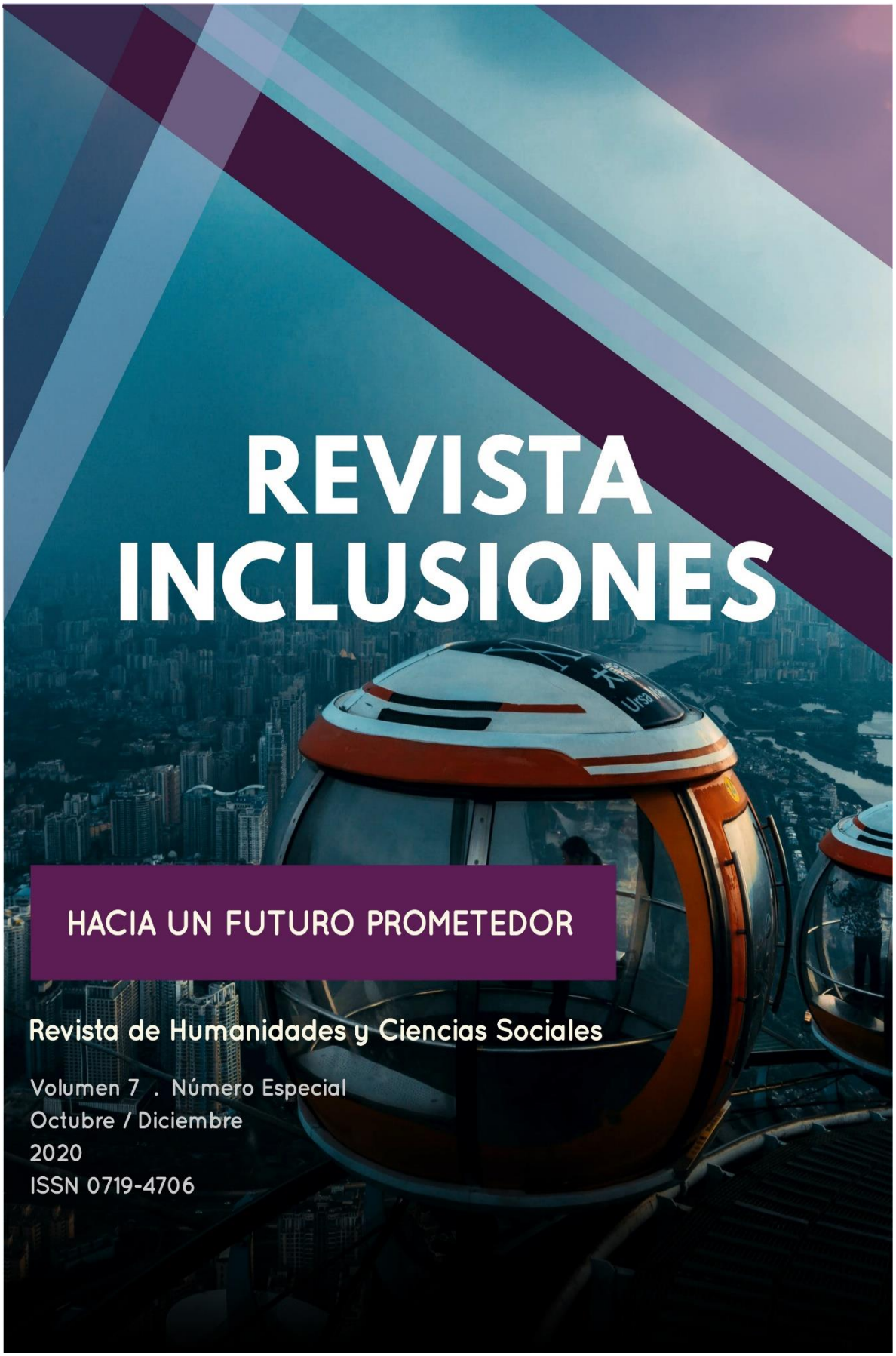

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SPATIAL REGULATION OF PERSONAL BEHAVIOR UNDER CONDITIONS OF THE ACCELERATING COVID-19 PANDEMIC

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Abstract

The purpose of the study is to examine spatial regulation of personal behavior under conditions of the accelerating COVID-19 pandemic. The research uses *proxemics* as a *symbol* of regulation of the research participants' behavior. It shows that keeping a safe distance has reflected on changes in individual-typological personality traits and on transformation of some nations from "contact" into "distant" ones. The paper substantiates that it is important to know the laws of *proxemics* language to optimize high-quality interaction. It outlines in a methodological aspect that distance between a sender and a receiver of a message is the most *symbolic* and relevant feature in the process of interaction. Research results. The study establishes that spatial regulation of personal behavior is significantly affected by such internal *symbols* as social prestige, introversion-extraversion, the overall volume and content of the message. It proves that that messages with personal and non-personal information influence personal behavior regulation. Personal messages are usually transmitted in the intimate and personal spaces. Non-personal messages are transmitted in all four

spaces of proxemic interaction: intimate, personal, social and public. The study generalizes that regulation of personal behavior mainly depends on *proxemic* indexes.

Keywords

Symbol – *Proxemics* – Interaction – *Symbolic* Regulation

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Introduction

In the process of defining the role of a *symbol* in the regulation of personal behavior, scholars rake into consideration the fact that the *symbol* is a meaningful construct of an object[1]. The *symbol* captures the essence of a psychic phenomenon and the genesis of knowledge concerning this notion[2]. The *symbol* functions simultaneously as a code, which contains sensory-intuitive patterns of mental reflection, which is transmitted to another person and a psycholinguistic unit of language that contains thoughts, feelings and images in a coded form. The *symbol* serves as a method of orientation and recognition of the unknown through the conversion of the unconscious information into thoughts, feelings and imagination[3]. These processes in the system of "person-person" interaction presuppose the identification of transmitted messages, the mutual understanding and the realization of a team[4]. The proxemic system plays an important role in the structure of the *symbolic* regulation of behavior[5]. According to Hall, *proxemics* regulates micro space while a message is being transmitted[6]. *Symbolic* regulation depends on the size of "personal space"; emotional coloring and personal "value"[7]; various reactions related to the violation of boundaries and other people's intervention into the personal space[8]. Personal space is dynamic: when the distance is shortened, emotional stress increases and vice versa. An intervention into the personal space zone leads to changes in the behavior of the subject, his posture, for example[9]. According to Argyale's hypothesis concerning the balance between such *symbolic* behavior structures as touching, eye contact and distance, the intensity of each of them is inversely proportional to the intensity of others. If one of the elements is implemented more intensively, the intensity of others decreases. For example, the bigger the distance is and the less possible touches are, the more intense the eye contact is[10].

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V. Labunskaya et al., considering the problem of *symbolic*-proxemic regulation believes that the choice of a distance for interaction is determined by the social prestige of people who send/receive messages as well as their ethnicity, gender, age and the nature of relationships between them. It is particularly important for a researcher to know the relations between the process of sending/receiving messages and physical location of the communicants in space. In this context *proxemics* is one of the main "tools" for both a sender and a recipient of the message. Through the change of the position in space or by moving around the communicants, the researchers influence some changes in the group dynamics[11].

Modern *proxemics* is mainly concerned with verbal and nonverbal dialogic behavior of people in the communicative spaces of different types as well as the impact of age, culture, social functions of the space and spatial objects that directly influence human beings[12].

The distance between a sender and a receiver is the most *symbolic* and relevant, when a message is being transmitted[13]. The distance depends on the *symbols* of sex, positive or negative perception of the message, olfactory *symbols*, volume of speaking, the ability to touch the recipient, maintain eye contact and feel physical warmth[14].

The results of the longitudinal survey have made it possible to determine a group of factors affecting the choice of proxemic *symbols* for encoding and decoding a message. They are: gender, age, height, ethnocultural identity, the subject of conversation, conditions under which it takes place, physical characteristics and emotional state of the communicants, as well as the characteristics of personal relationships between them, character traits, etc.

The purpose of the study is to examine spatial regulation of personal behavior under conditions of the accelerating COVID-19 pandemic and identify the proxemic *symbols*, affecting the process of regulation of a message-sender's and a message-receiver's behavior.

Research Methodology

The methodological starting points of our research in the context of spatial regulation of personal behavior under conditions of the accelerating COVID-19 pandemic are an approved methodological complex using psycho-diagnostic tools. This methodology

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has been tested by researchers in the study of adaptation[15], anxiety[16], innovation[17], as well as in the study of mental states of expectation[18] in various activities. All these experimental and empirical studies contained elements of the research of spatial regulation of personal behavior.

In order to achieve the aim of the research, we conducted four series of a psychological experiment in February–May, 2020. The first series of the experiment was aimed at clarifying the decoding features of proxemic space while dealing with people of different age groups. The participants of the experiment were people, who graduated from higher educational institutions (n=391) (officers, psychologists and volunteers) aged 18-45 years, including 208 men and 183 women. The method "Portraits" was used with each participant, who was asked to move on a comfortable distance regarding the pictures of people placed in a "*symbolic* circle". There were 12 portraits (6 male and 6 female). The photos in the "*symbolic* circle" were placed in random order, at equal distance from one another. Each photo (both male and female) showed a certain age of a person. 5 age groups were used in the psychological experiment: 18 to 25 years old, 26 to 35 years old, 36 to 45 years old, 46 to 50 years old, and above 50 years old.

Having entered the "*symbolic* circle", the participants of the experiment acted in accordance with the following instruction: *"Dear Sir/Madam, there are 12 photos of both women and men in front of you. Please, look at them carefully and place yourself at the most comfortable distance, regarding each photo".* In some cases the instruction was made more accurate, a participant determined, what was the maximum distance at which he/she would allow individuals on the picture to get closer to him/her. To facilitate the decoding of the participants' actions in a certain *symbolic* zone, each picture was numbered in accordance with the age of the person represented on it.

Concerning the results of the first series of the psychological experiment a protocol was made, the interpretation of which made it possible to identify the role of proxemic *symbols* in the process of regulating the behavior of people of different age groups.

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Results and Discussion

The interpretation of the psychological experiment results

The results have shown: when people are not aware that they are being watched, women, unlike men, are inclined to speak at a shorter distance (regardless of the sex of the interlocutor).

Most men are less careful about keeping a certain distance considering the nature of relationships, but in general they tend to keep a greater distance from the interlocutor as opposed to women[19]. The research found that 68.4% of men aged 18 to 25 years prefer personal distance (46 cm - 1.2 m) while interacting with representatives of the same sex whose age ranges from 18 to 50 years that mainly involves a visual eye contact to support the conversation. However, the introverts position themselves within 98 cm - 1.2 m while transferring or decoding messages, in other words, they tend to keep a more distance of personal space while extroverts feel comfortable within 55 cm - 89 cm. In the intimate distance (0-45 cm), which is usually characterized by a high trust, tactile contact and soft speech, only 7.5% of the research participants aged from 18 to 25 years acted effectively and only with the age group of 36 to 45 years.

Another 14.0% of the participants feel comfortable within the distance of 1.2 m – 3.6 m, i. e. in the social distance while interacting with men aged 46-50 years, and 10.1% of the participants chose the distance greater than 3.6 m. while interacting with the persons of more than 50 years old.

While regulating their own behavior with the opposite sex, 33.7% of men aged 18-25 years develop interaction with their female peers and women aged 36-45 years within intimate space of communication.

While communicating with other age groups, 66.3% of men perform interaction within personal space (.46 cm - 1.2 m). Graphically the regulation of *symbolic* space which is characteristic of the men aged 18-25 years is shown in Fig. 1.

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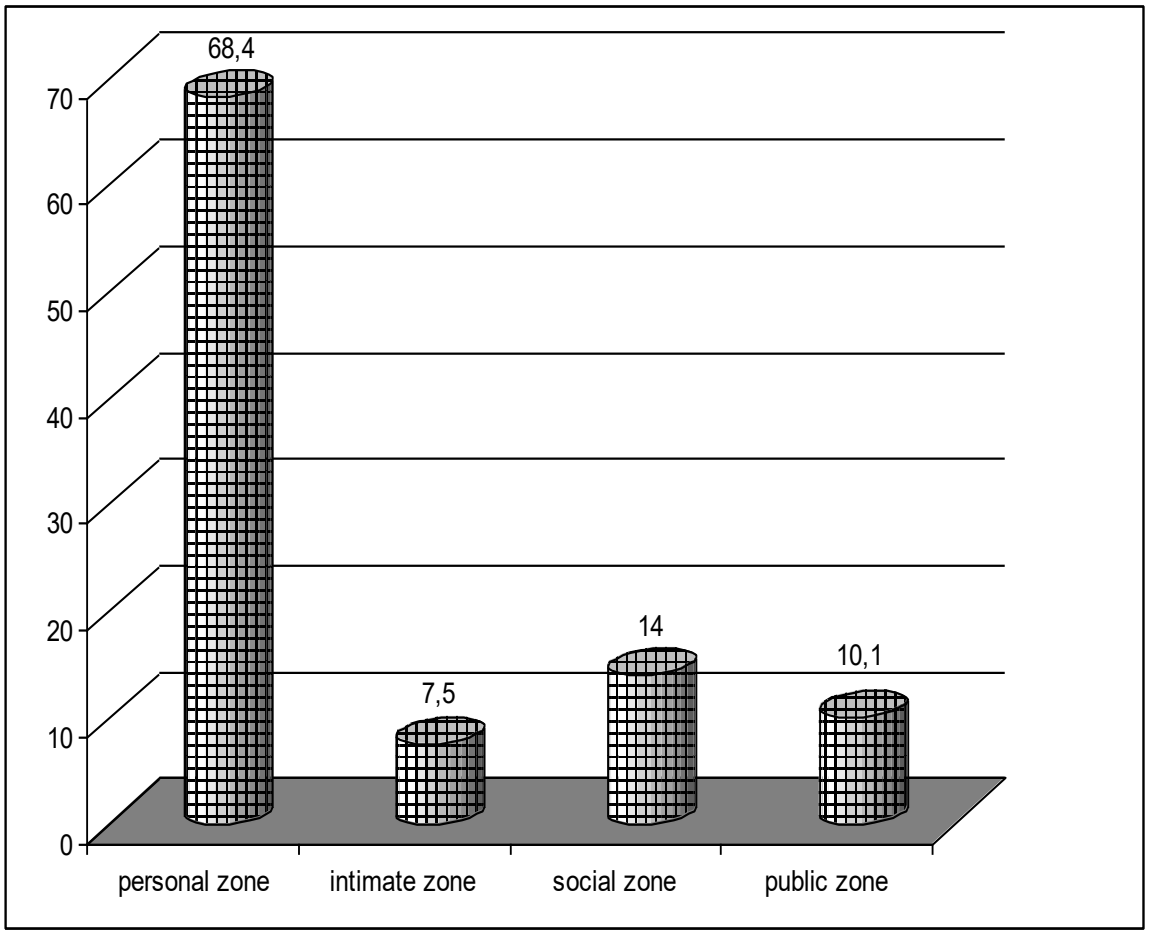

Figure 1
Regulation of *symbolic* space by persons aged 18-25 years in the “man-man” interaction link (%)

The results of the experiment show that the men of 18-25 years age group come much closer to women than to men, while regulating their behavior. In this case nobody chose social or public space but preferred closer distance while positioning themselves towards the photos of females. Therefore, for the male participants the age indicators of behavior regulation in the “man-man” interaction link are quite significant and an increase in age difference leads to an increase in proxemic distance of interaction between them.

The analysis of the survey results concerning women aged 18-25 years showed that their interaction in the “woman-man” link with 36-45 years old age group and older than 50 years falls into personal space in 53.8% of cases (see Fig. 2).

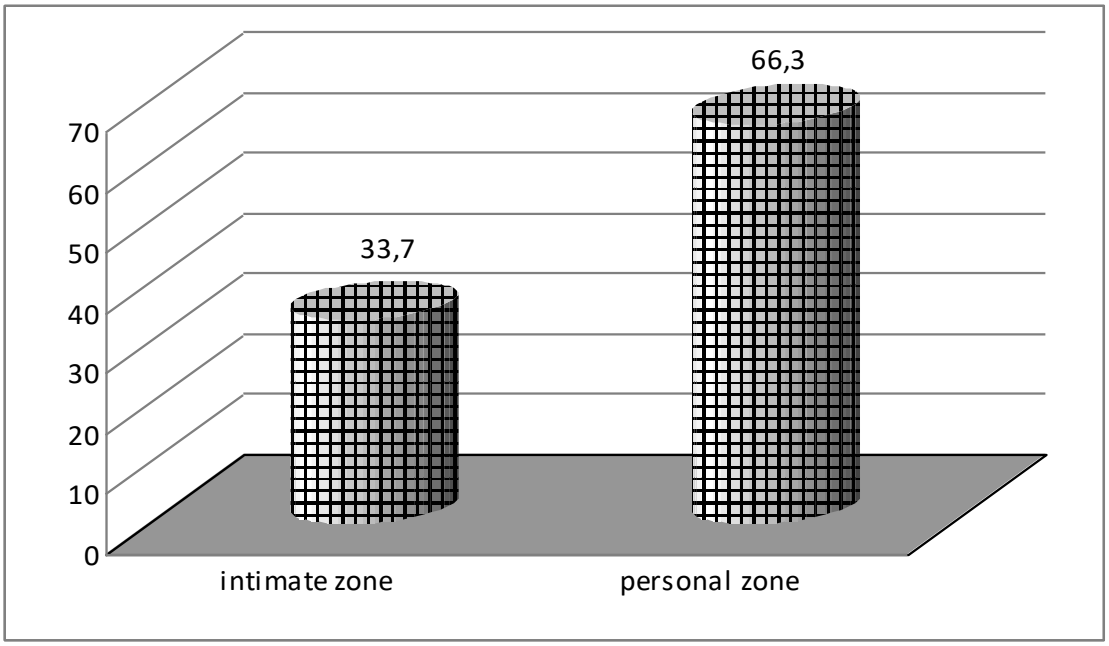

Figure 1
Symbolic zone regulation by persons aged 18-25 years in the “man-woman” interaction link (%)

Women feel comfortable interacting with the men aged 18-35 years in the intimate space. The greatest distance at which the women aged 18-25 years felt comfortable interacting with men was found for the men aged 46-50 years (9.8%) which was within the social space with an average of 2.45 m (see Fig. 3).

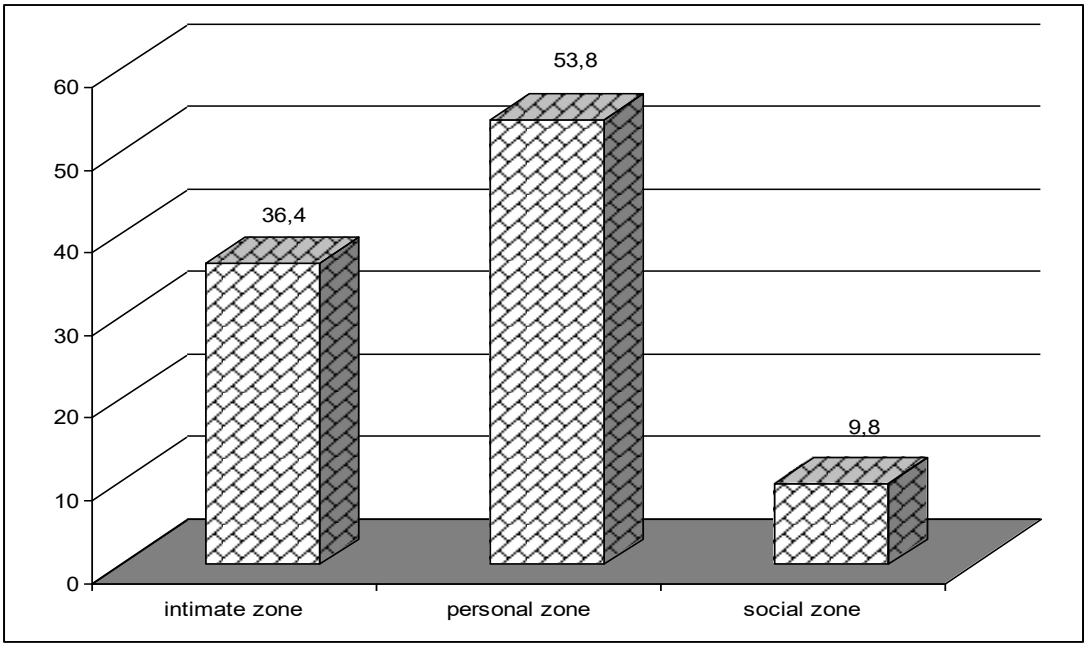

Figure 3
Regulation of *symbolic* space by persons aged 18-25 years in the “woman-man” interaction link (%)

Examining the behavioral trends in the “woman-woman” link, in 87.7% of cases the women aged 18-25 interacted with women aged 18-45 years in the intimate space (see Fig. 4). Another 12.3% of women of the same age group interacted with the women aged 46-50 years and older than 50 years within the personal space (1.10 m).

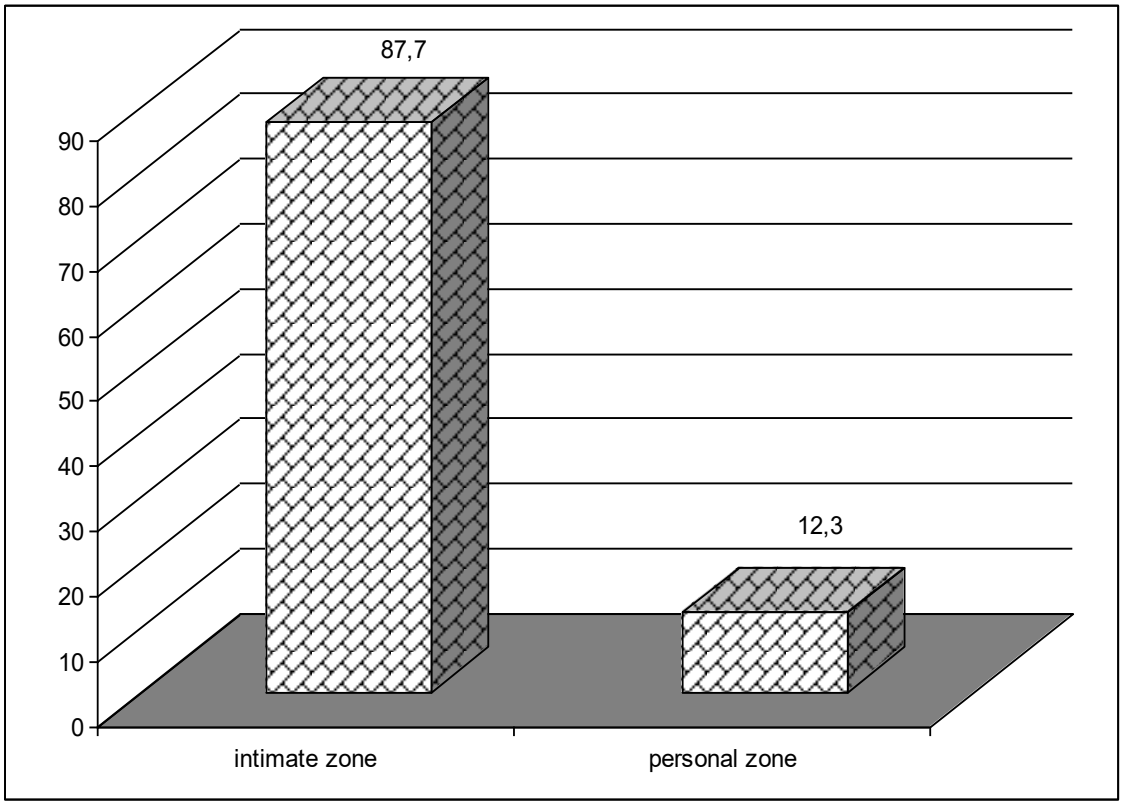

Figure 3
Regulation of *symbolic* space by persons aged 18-25 years in the “woman-woman” interaction link (%)

In comparison to the previous age group (see Table 1) the men aged 26-35 years who were examined interacting with each other in the “man-man” system at a greater distance.

Age	**“Man-man” behavioral regulation (%)**																	
26-35 years	18-25 years				26-35 years			36-45 years				46-50 years				50 years and above		
	I	P	S	Pb	I	P	S	I	P	S	Pb	I	P	S	Pb	I	P	S
	12.5	26.5	49	12	12.5	75	12.5	12.6	31.4	37.7	18.3	12.5	38.7	12.5	36.3	12.5	19.0	68.5

Note: I – Intimate zone; P – personal zone; S – social zone; Pb – public zone.

Table 1
Regulation of *symbolic* space by men aged 26-35 years old

Table 1 shows that the men aged 26-35 prefer personal space while interacting with the persons of the same age group (75.0%) and the men aged 46-50 years (38.7%). For 12.5% of the participants the interaction in the "man-man" system takes place comfortably within the intimate space regardless of their interlocutor's age.

Exploring age characteristics of the proxemic *symbols* the researchers note that the greater the age difference between the interacting individuals is, the greater distance is between them[20]. In Nirenberg's opinion, the proxemic distance of interaction increases gradually from the age 6 years to early teens, then the adult norms are set. The results of our research indicate that this trend is also observed in adulthood. So, when the men of the age group of 26-35 years interacted with younger persons (18-25 years), then only 12.0% of the respondents considered public space (more than 3.6 m.) as comfortable. In the interaction with peers, public space was chosen by 12.5% of the respondents; with persons of 36-45 years, public space was considered as comfortable by 18.5% of the research participants. When dealing with men aged 36-45 years, this trend was shown by 36.3% of the respondents (see Table 1). Noticeably, the men aged 26-35 years did not interact with persons older than 50 years in public space. Simultaneously, in 68.5% of the cases the average of social space was 3.48 m. which also gives reason to believe that an increase in the age difference makes people increase the distance between a sender and a receiver of the message.

In the psychological experiment among the women aged 26-35 years in the "woman-woman" interaction link public space of sending and receiving a message was not manifested at all (see Table 2).

Age	**"Woman-woman" behavioral regulation (%)**													
26-35 years	18-25 years			26-35 years			36-45 years			46-50 years		50 years and above		
	I	P	S	I	P	S	I	P	S	P	S	I	P	S
	13.4	70.3	16.3	22.5	69.7	7.8	23.7	49.7	26.5	71.2	28.8	17.9	54.4	27.7

Note: I – Intimate zone; P – personal zone; S – social zone.

Table 2

Regulation of *symbolic* space by women aged from 26 to 35 years

The women aged 26-35 years believe that the most acceptable interaction space is the personal one which dominates regardless of the age of their interlocutress. In the intimate space the women aged 26-35 years deal more often with the women of 36-45 years (23.7%) and their peers (22.5%). The social space of contact for the women of 26-35 years is regarded as the most comfortable for 27.7% of the female participants while interacting with women aged 36 years and more.

The behavior regulation of the men aged 26-35 who were examined in the "man-woman" link shows that for 87.5% of them the interaction with the women of 18-25 years takes place exclusively in the intimate space. This trend is shown in Fig. 5.

[20] G. Nierenberg y H. Calero, How to read a person like a book (Moscow: Smysl, 1990).

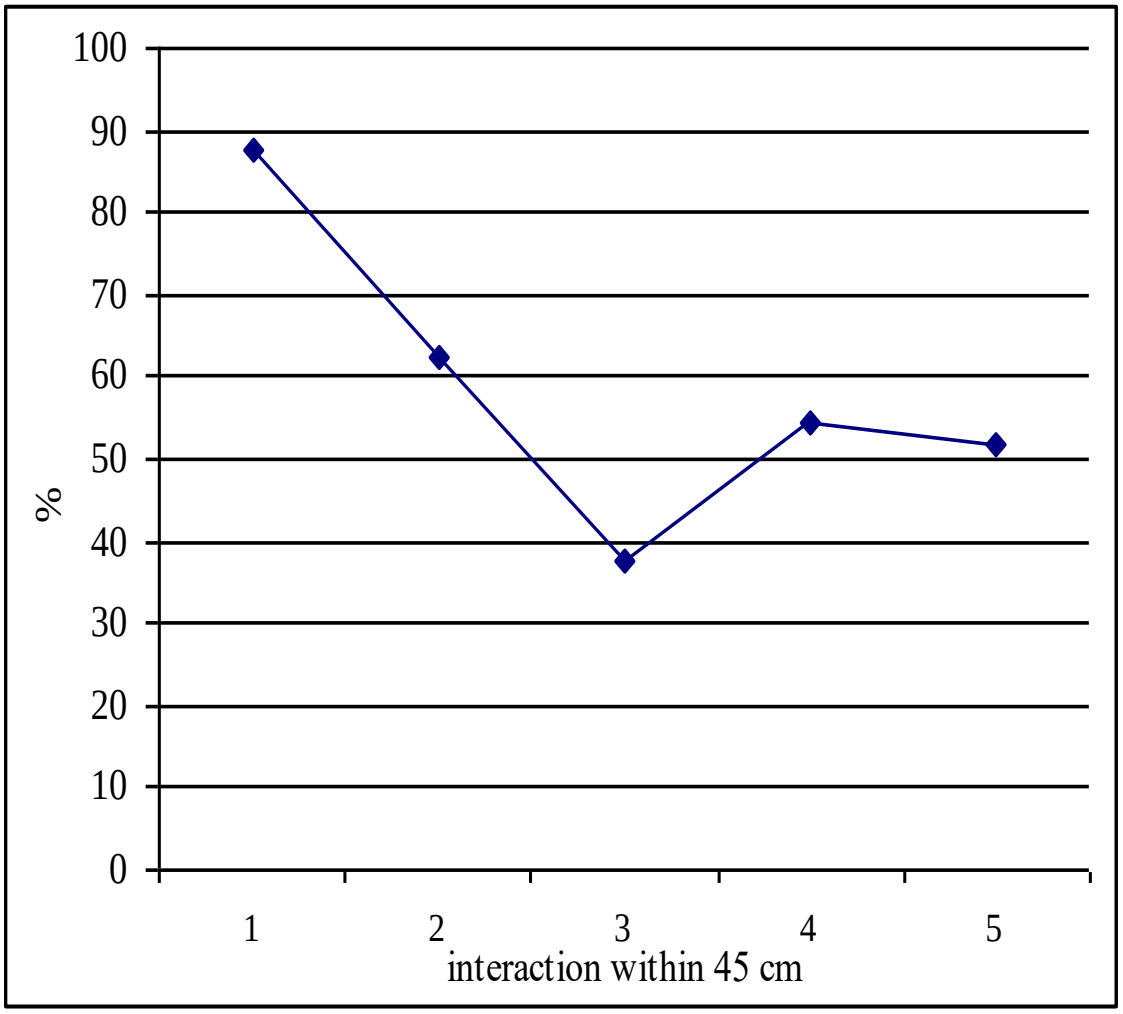

Figure 5
Regulation of *symbolic* space by men aged 26-35 years in the “man-woman” interaction link

Though this tendency decreases with an increase of a woman’s age, it does not exceed 51.6% when dealing with the women who are older than 50 years. However, the percentage of the women aged 26-35 years who interact comfortably with men of different age groups in the intimate space is much lower. So, only 14.8% of the women aged 26-35 years felt comfortable while interacting close with the men of 18-25 years. When the females were dealing with their male peers, this number made 13.5%. However, with an increase in the men’s age this percentage fell. The interaction with men older than 50 years (8.5%) in the intimate space of communication is less by 43.1% when compared to the same pair of “man-woman” (see Fig. 6).

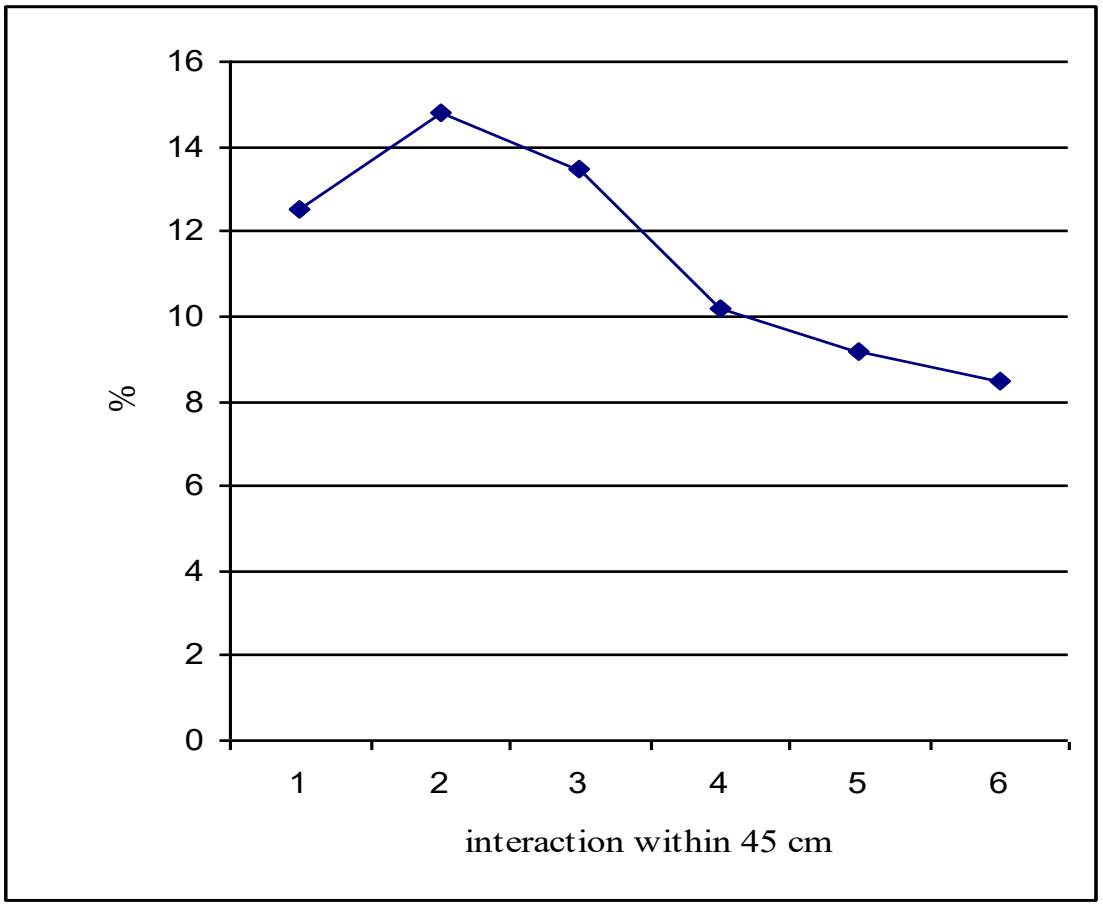

Figura 6
Regulation of *symbolic* space by women aged 26-35 years in the “woman-man” interaction link

The women aged 26-35 years interact in the personal space with their male peers (75.7%) and men aged 46-50 years (52.6%) and in the social space with the men aged 18-25 years (51.8%) and above 50 years (62.5%).

While regulating their own behavior women, who were examined during the psychological experiment found the main difficulty in the lack of opportunities to decode the mental state of the person depicted in the photo. Under natural conditions, regulating their own behavior with a particular person, the women (as well as the men) choose a smaller distance with a friendly person and distance themselves from an unfriendly, evil and bad one. The women keep a close distance in the conversation when the information sent/received is good or neutral.

Among the women aged 36-45 years who were examined the interaction in the “woman-woman” link is carried out in the following *symbolic*-proxemic domain: when dealing with the women aged 18-45 years, it takes place in the personal space whereas when dealing with the persons older than 50 years the interaction is performed in the public space. In the “woman-man” link the women preferred the personal space while interacting with the persons aged 18-25 and their peers, when dealing with the men aged 26-35 the preference was given to the social space, and in the case with the men older than 50 years – to the public space.

It is evident, that the intimate interaction space was not externalized while surveying the women aged 36-45 years. On the other hand, among the men aged 36-45 years who were examined in the "man-woman" interaction link, the intimate space is dominating (68.4%) during information transmission/reception when dealing with the women aged 18-35 years. Also, for the men aged 36-56 years the interaction with the women aged 36 years and above takes place in the personal space for 50.0% and in the social space – for 48.0% of the male responders. The public space was subsistent only to 2.0% of the men examined.

The main purpose of the second series of the psychological experiment was to find out how the stages of information transmission and the nature of message subjects (personal, non-personal) affect the behavioral regulation of a person.

Exploring the regulation of *symbolic* space, we found that the changes in distance allow decoding important parts of the message (see Table 3).

Proxemic regulators of personal behavior	**Intimate space**	**Personal space**	**Social space**	**Public space**
Beginning of message transmission			+	+
End of message		+		
Change of the message subject			+	
Personal messages	+			
Non-personal messages	may take place in all 4 spaces			
Praise	+	+		
Negative comment				+
Neutral comment			+	
Anger condition	+			+

Table 3
Symbolic regulation of behavior in various *proxemics* spaces

As it is shown in Table 3, if the beginning of the message in most cases took place in the social and public spaces, the last part of it was carried out in the personal ones. We recorded this trend even when the message sender and receiver did not come to a mutual agreement at the end of their conversation. Thus, the person whose opinion was not always shared at the end of sending/receiving the message was the first one to invite or enter the personal space.

Changing the message subject (even if it was sent in the intimate space) caused a change in the communication distance. In most of the cases, the change of the message subject took place in the social interaction space. Personal messages usually proceeded in the intimate (76.5%) and personal (23.5%) spaces (if other personal factors would not neutralize them). Non-personal messages among those observed were communicated in all four spaces.

The main purpose of the third series of the psychological experiment was to find out how the starting attitude to the same message subject, semantic comment on the actions of the persons examined, and a certain mental state can affect the distance when receiving and sending messages. The third series of the experiment was conducted after the research participants took a module test. To get a personal performance assessment each person who was examined entered the lecture room where they listened to the test administrator's comments of different content addressing the respondent: either negative,

neutral or positive. It was determined that the persons who were given a negative comment positioned themselves mostly in the public space (96.7%) while only 3.3% of the participants of this category stayed in the distant social space (the lecture room was designed for 157 seats). Those of the persons examined who listened to a positive comment from the examiner, positioned themselves in the intimate and personal spaces. In the case when the comments were neutral 88.1% of the persons positioned themselves in the social space (see Table 3). Thus, having received negative evaluation, people tend to set a greater distance than in dealing with the same person before he/she hurt them, especially if the offender is seen as a person of a higher status. Regardless of the message subject when conversation partners come closer to each other it may lead to the reduction of the time needed to send a message.

It was found that the current mental state of a person has a significant impact on the regulation of a *symbolic* space. For example, the state of anger revealed itself in an ambivalent way. So, in case of danger on the part of an angry person the most comfortable space for interaction was the public one. At the same time seeking for revenge the person in a state of anger often interfered in the intimate space of his/her abuser. Thus, changes in the emotional state sometimes lead to big differences, depending on how close or far we want to be in regards to others. This statement is clearly seen when a proxemic distance is regulated by a person who is depressed, tired, in a state of overexcitement or joy.

In the fourth series of the experiment we examined how the height of a message sender and receiver affects the *symbolic* space regulation. It is observed that in the eyes of others the *symbolic* height of a person is not always equal to the factual one but often depends on the social status. During the psychological experiment we confirmed a number of hypotheses that there is a clear correlation between a sender's and a receiver's height and the distance at which the message transmission takes place (see Table 4).

Proxemic regulators of personal behavior	**Intimate space**	**Personal space**	**Social space**	**Public space**
Height: "tall-short" (men)		+		
Height: "tall-tall" (men)		+		
Height: "short-tall" (men)			+	+
Height: "short-short" (men)	+			
Height: "short-tall" (women)	+	+		
Height: "short-short" (women)				+
Height: "tall-short" (women)			+	+
Height: "tall-tall" (women)			+	
Extraversion	+	+		
Introversion			+	+

Table 4
Regulation of *symbolic* zone of by persons of different heights

Thus, tall men always tend to get closer to their shorter interlocutors during the interaction process. In 84.8% of the cases transmission/receipt of a message between men in the "tall-short" link is carried out in the personal space. The same trend is observed when both men are tall. At the same time, the smaller is the height of the person, the bigger distances he/she prefers. Normally, the interaction between men in the "short-tall" link took place in the public space (81.4%) and in the distant social space (18.6%). The men in the "low-low" link often interact on the verge of intimate and personal spaces.

The women, who were examined, showed a different tendency. So, the interaction between the women in the “short-tall” link took place in the intimate and personal spaces while behavior regulation among the women in the “short-short” link was carried out in the most distant – public space. The interaction between the women in the “tall-short” link took place mainly in the distant social and public spaces while the tall women interacted in the most comfortable way in the social space. We have registered many cases when obese persons of both sexes tended to keep greater distances than lean persons during the transmission/receipt of messages.

The regulation of proxemic space is also largely affected by such internal *symbols* as social prestige, introversion-extroversion, the total volume and content of a message. The behavioral regulation also depends on external *symbols* such as the size of the room, lighting, etc.

A number of experiments have been conducted regarding the influence of introversion and extraversion on the regulation of proxemic relations. There were many cases when an extrovert, trying to hide his/her feelings, was more expressive than an introvert, and gave away his/her intentions to a greater degree[21]. Applying this statement during the psychological experiment, we can note that introverts interacted in 72.7% of the cases in the social space and in 27.3% of the cases in the public space while extroverts acted on the contrary: in 21.6% of the cases they felt better in the intimate and personal spaces (78.4%). In other words, an extravert may be satisfied with having less personal space than an introvert.

Conclusion

The results of the psychological experiment conducted in February–May, 2020 under conditions of the accelerating COVID-19 pandemic give reason to believe that behavioral regulation can be predicted with a high probability based on the available indicators of *proxemics*. In an effort to win approval of another person a person reduces the distance of interaction – as opposed to the cases when a person, for whatever reasons, intends to avoid approval. This statement supports the hypothesis that the proxemic distance of interaction is correlated with the level of a negative attitude to the interlocutor.

The regulation of *symbolic* space by persons of different age groups plays an important role in the process of encoding/decoding a message. The *symbolic* behavior of a person organizes the space-time characteristics of the interaction. Behavior regulation in the proxemic space can affect various aspects of the interacting subjects since representatives of different nations have different ideas about its optimality. The ignorance of culturally determined features of behavior of representatives of different nations in proxemic spaces could cause misunderstandings, misconceptions about the behavior and culture of others. However, the impact of ethnicity on the size of personal space cannot be considered as firmly established and this may become prospects of our future research.

[21] M. S. Remland; T. S. Jones y H. Brinkman, “Interpersonal Distance, Body Orientation, and Touch: Effects of Culture, Gender, and Age”, The Journal of Social Psychology, Vol: 135 num 3, (1995): 281-297. y F. B. Mandal, “Nonverbal Communication in Humans”, Journal of Human Behavior in the Social Environment, Vol: 24 num 4 (2014): 417-421.

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