

THE STRUCTURE OF TEMPERAMENT WITHIN HUMAN INTERSUBJECTIVITY

СТРУКТУРА ТЕМПЕРАМЕНТУ В ІНТЕРСУБ'ЄКТНОСТІ ЛЮДИНИ

A major research question of the article concerns how people with different temperament handle interaction in intersubjective relationships for receiving enrichment. The question is about the problem of personality variables of intersubjectivity. To understand such a relationship, we try to understand the concept of intersubjectivity, which is the essence of a human being. The process of social interaction occurs when two or more people engage in joint activities, exchanging experiences, emotions, ideas, meeting each other's needs, and enriching each other's world views. The idea that mutual enrichment is the result of a complex mechanism of relationships between society and the individual comes from Vygotsky's ideas about cultural and historical psychology. The process of internalization involves assimilation of values, which determines that the intrapsychological process, which is social in nature, leads to the development of internal, intrapsychological processes, which leads to positive changes in the individual. Intersubjectivity can be viewed as a reality that results from a shared understanding of things, a shared interpretation of social and cultural aspects of life, and a shared appreciation of the social context.

Our experiment involved more than 230 participants (students at Ukrainian universities aged 16 to 40, living in Ukraine). The following psychodiagnostic techniques were used in our study: STQ77 temperament structure questionnaire; Questionnaire of intersubjectivity. The present study investigates intersubjectivity within the context of an integrated study of personality, which includes the study of temperament and personality traits. Several correlations have been found between temperament structure characteristics and intersubjectivity. The following traits of temperament are positively related to intersubjectivity: social Endurance (ERS), empathy (EMP), social tempo (TMS), plasticity (PL), motor tempo (TMM), sensitivity to physical sensation (SS), and impulsivity (IMP). There is a strong connection between temperament, and intersubjectivity, and further research may reveal new insights.

Key words: intersubjectivity, prosocial activity, personality, temperament, communication.

У статті розглянуто те, як люди з різними характерами темпераменту справляються зі взаємодією в інтерсуб'єктних

стосунках для отримання збагачення своєї суб'єктності. Йдеться про проблему особистісних чинників інтерсуб'єктності. Крізь розуміння такого взаємозв'язку ми у своєму дослідженні намагаємося зрозуміти концепцію інтерсуб'єктності, яка є сутністю суб'єкта, людської особистості. Процес соціальної взаємодії відбувається тоді, коли двоє або більше людей займаються спільною діяльністю, обмінюючись досвідом, емоціями, ідеями, задовольняючи потреби один одного та збагачуючи погляди один одного на оточуючий світ. Думка про те, що таке стесціфічне взаємозбагачення є результатом складного механізму взаємовідносин суспільства та особистості, виходить з уявлень Віготського та його культурно-історичної психології. Процес інтеріоризації передбачає засвоєння цінностей, що зумовлює те, що внутрішньопсихологічний процес, який має соціальний характер, призводить до розвитку внутрішніх, внутрішньопсихологічних процесів, що, своєю чергою, призводить до позитивних змін людської особистості. Інтерсуб'єктність також можна розглянути як реальність, яка є результатом спільного розуміння речей, спільної інтерпретації соціальних і культурних аспектів життя та спільної оцінки соціального контексту.

У нашому експерименті взяли участь понад 230 учасників (студенти українських університетів віком від 16 до 40 років, які проживають в Україні). У дослідженні використано такі психодіагностичні методики: опитувальник структури темпераменту STQ77; Опитувальник інтерсуб'єктності. Виявлено декілька кореляційних взаємозв'язків між характеристиками структури темпераменту та інтерсуб'єктністю. У результаті було визначено риси темпераменту, позитивно пов'язані з інтерсуб'єктністю: соціальна витривалість (ERS), емпатія (EMP), соціальний темп (TMS), пластичність (PL), руховий темп (TMM), чутливість до фізичних відчуттів (SS) та імпульсивність (IMP). Як результат, між темпераментом та інтерсуб'єктивністю існує сильний зв'язок, подальші дослідження у цьому напрямі можуть виявити нові ідеї.

Ключові слова: інтерсуб'єктність, соціальна активність, особистість, темперамент, спілкування.

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Hrebinyk S.M.

Postgraduate Student at the Department of General and Practical Psychology Nizhyn Mykola Gogol State University

Introduction. Since the mid-1980s, psychologists have been researching intersubjectivity. Nevertheless, it is still crucial to examine issues and questions that relate to personality, temperament, and intersubjective relations. These relationships are considered the foundation of a stable society's growth and well-being. As a result of joining together, people contribute to the good of others – whether it is another person, a group of people, or humanity as a whole. Intersubjectivity can be used to measure personal development and quality of life in society because the more people engage in positive

relationships, the greater is their opportunity for inner growth and development as well as a social good. The importance of a prosocial lifestyle for adolescents and adults is for them to form relationships of friendship and love that are facilitated and supported.

The present study asks: how does personality affect people in intersubjective relationships in their ability to receive enrichment? Providing an answer to this question would provide more in-depth scientific insight into the nature of intersubjectivity. There are many variables in intersubjectivity that appear in real-life situations

that are not sufficiently explored in the mainstream of the study of human differences. It reveals the gaps in our research but still demonstrates its necessity and relevance. One can begin studying intersubjectivity by studying traits related to temperament and personality.

An understanding of the concept of intersubjectivity must be established first, which is the essence of the subject. Social interaction occurs when two or more people engage in joint activities, resulting in the exchange of experiences, emotions, ideas, meeting each other's needs, and enriching worldviews. A mutual enrichment of worldview, values, and experiences stems from Vygotsky's ideas about cultural and historical psychology, in which he considers mutual enrichment as the result of a complex mechanism of relationships between society and the individual. It appears that internalization is the process of assimilation of values, which determines that the intrapsychological process, social in nature, leads to the development of internal, intrapsychological processes that in turn produce positive changes in the individual [27].

Specifically, this study aims to examine the perception of intersubjectivity and its connections with personality, which constitute the complex phenomenon of such social interaction. Social interaction implies the existence of a phenomenon known as intersubjectivity, which stands beside the notions of mutual aid, mutual solidarity, and prosocial behavior [15]. In a broad sense, intersubjectivity is defined as a reality that results from a shared understanding of the nature of things, a shared interpretation of the components of social and cultural life, and a shared appreciation of the social context [20].

Understanding this phenomenon is approached in different ways according to different theories. Simulation Theory [21] suggests that people use imaginary mental states to simulate certain behaviors and then pass those simulated mental states through their decision-making mechanism, and then attribute those results to others. According to interaction theory, intersubjectivity is determined by interactive phenomena [3]. During interactions, two or more autonomous entities engage in the regulated behavior together. An example of this is dog walking, in which the dog owner's behavior is influenced by the dog's stopping and sniffing, whereas the dog's behavior is influenced by the owner's commands. The result is intersubjectivity that is determined by direct perception and interaction, which is why it is called "primary" intersubjectivity.

The understanding of intersubjective interaction comes from studies of dialogism [8], which demonstrate how deeply intersubjective language is. As a result, people always listen to others when communicating, accepting their viewpoints and paying attention to what

others may think. This study suggests that the structure of certain symbols that form language is intersubjective, and the psychological process of self-reflection is intersubjective [9].

How intersubjectivity manifests itself also depends on the culture [2]. In specific Native American communities, nonverbal communication is very common, producing intersubjectivity among all members of the community, probably because there is "shared cultural understanding" and a history of joint activities [1]. Through continuous interaction with adults, Native American children grew and developed deeply rooted in their community's values, expectations, and ways of life rather than through oral instruction. A study has been conducted on the understanding of intersubjectivity based on the process of internalization in newborns who have a very rapid developmental process. The brains of newborns are biologically wired to coordinate their actions with others [24]. The ability to synchronize and coordinate with others promotes cognitive and emotional learning through social interaction [22]. However, the most productive social connections are those that are bidirectional between children and adults, when both parties are actively defining a common culture. According to another study, children from the Chilihuani community of the Andean Mountains learned to weave without special instruction. Observing and participating in the lives of their societies, they learned the technique from others. Therefore, they were able to develop their skills by playing, experimenting, and watching adults [16]. The reason for this is the importance of other people who have an impact on the personality.

Intersubjectivity among infants has been studied through the relationship with their mothers and the unique interaction that develops in such a relationship [5]. It indicates the child's ability to recognize the mother's emotional state and to understand how it impacts her personally. A similar study explored the interaction between infants and fathers [11]. This analysis confirmed that infants can coordinate their emotional responses to questions from their fathers. Children and adolescents' study of the environmental factors and the maternal influence on their development of prosocial values [23] demonstrates the influence that mother care has on mental health and academic achievement, and the assimilation of positive social values. It explains the assimilation of values, or more specifically, the internalization of values and intersubjectivity in relationships.

Intersubjectivity, along with general understanding, is often considered a facilitating characteristic of interactions, exemplified by mutual growth and development [15]. This type of interaction enriches the individual in all aspects of his activity, reflexivity, creativity, and subjectivity. As a result, we re-conceptualize the phenomenon

of intersubjectivity as a positive psychological type of interaction.

There may be an inverse facilitation context for intersubjectivity. In the case of the psychological trauma of the mother, examined in a psychoanalytic approach [19], the intersubjective relationship between mother and child can be detrimental.

As a consequence of psychological diagnosis practices, evaluation of the subjective experience is often ignored and undervalued, resulting in a negative impact on the accuracy of psychiatric diagnosis, empirical research, and therapeutic outcomes. As in this case, the intersubjective perspective refers to the perceptions of the participant's second personality, intending to help to build interpretations and stories through joint interaction and co-interviewing [6].

As a result of the constant intersubjective relationships, psychologists studying scheme-therapy have noted that personality can be regarded as a scheme despite character traits [12].

In neurobiology, this form of social interaction has been explored in terms of phenomenological research and the study of mirror neurons, which helps to determine the mechanisms that lead to comprehension of interpersonal relations [7]. In this case, personified cognition becomes governed by mirror mechanisms as people use their mental states and processes as a basis for functionally attributing others' mental states and processes. Moreover, another neurobiological study of mirror neurons shows that understanding the principles of psychology, empathy, and the theory of mind are directly related to the phenomenon of intersubjectivity. Therefore, monkey experiments have shown that the mirror system for gesture recognition also exists in humans [17]. This illustrates the relationship between responsibility and observation, which forms the necessary transition from action to communication, exemplifying the relationship between the actor and the observer. A neurobiological study has examined intersubjectivity in two social neural systems, the "mirror system" and the "mental system". Those two behavioral neural systems function simultaneously during cognitive processes associated with interaction and communication with others [26]. It aims to understand: the fundamental differences between people and things; communication as a key process that permits interplay with others; and that understanding inner experience is a fundamental cognitive ability necessary for effective communication.

Method. Methodologically, this study uses the cultural-historical theory of L. S. Vygotsky. An understanding of the zone of proximal development and interfunctional psychological systems underpins intersubjectivity. Studies of intersubjectivity include not only the study of it as

an intrapsychological phenomenon but also its psychological essence as a result of mutual and culturally determined interpersonal interactions.

The purpose of the study is to identify intersubjective differences between people with different structures of temperament and different individual typological traits.

Based on the notion of integral individuality, it will be appropriate to explore intersubjectivity in a personal way and to rely on a comprehensive diagnosis of personality, which includes the study of temperament and personality traits.

The subjects were asked to fill out questionnaires. The respondents were provided with Google Forms and asked to fill out the questionnaires. The estimated time for the survey was 40 minutes. The participants completed the STQ77 temperament structure questionnaire in Russian [18] and the Questionnaire of intersubjectivity [14]. In essence, this research aimed to explore the interrelationship between temperament and personal disposition within a holistic understanding of intersubjectivity. Following this, a correlational analysis was performed using Spearman's correlation and SPSS 23.0 software.

Our experiment involved more than 230 participants (students at Ukrainian universities aged 16 to 40, living in Ukraine). The experiment was anonymous, and the respondents did not specify their age or gender (their age was determined by analyzing the journals where the dates of birth are indicated; because they were not all present the exact gender proportion is not known, but the approximate percentages are 46 % male, 54 % female).

The following psychodiagnostic techniques were used in our study: STQ77 temperament structure questionnaire; Questionnaire of intersubjectivity.

Questionnaire of intersubjectivity includes 16 units with which a person can completely agree or disagree (5-point Likert scale). The questionnaire demonstrates internal consistency and reliability (Cronbach's $\alpha=0.831$, $n=518$), retest reliability (Spearman's rank correlation coefficient $r=0.516$, $p\leq 0.01$, $n=117$), constructive validity ($n=518$). It has a single scale that defines Intersubjectivity as an integral characteristic of interpersonal interaction, manifest in communication skills, the tendency to communicate and interact, and positive feelings during communication.

The STQ-77 Temperament Structure Questionnaire consists of 77 statements that relate to 12 temperament scales (6 each) and a reliability scale (5 points). The answer is given on a 4-point Likert scale: 1) "strongly disagree", 2) "disagree", 3) "agree", 4) "strongly agree". The study of design validity and reliability of the questionnaire shows indicators in the range of 0.70–0.86. STQ-77 scales are: Motor

Endurance (“ERM” – the ability to sustain physical exertion during extended periods), Social Endurance (“ERS” – a measure of a person’s ability to cope with long-term social interaction), Intellectual Endurance (“ERI” – a person’s ability to withstand prolonged intellectual (mental) activity), Motor Tempo (“TMM” – the predominant rate of physical activity), Social Tempo (“TMS” – speech rate, reading rate, and other speech actions), Plasticity (“PL” – flexibility, adaptability, and versatility), Sensitivity to Physical Sensations (“SS” – the awareness of a person’s ability to sense their bodily sensations and pleasures), Empathy (“EMP” – the ability to empathize, understand others’ emotional state, and be sensitive to chances), Sensitivity to Probabilities (“PRO” – capacity to understand and anticipate probable events, development, and processing of new information), Self-confidence (“SLF” – a tendency to optimism and self-confidence), Impulsivity (“IMP” – lack of emotional control, inability to control their emotions), Neuroticism (“NEU” – failure expectation, and a low tolerance for uncertainty).

Results. The means and standard deviations for variables were revealed before starting the correlation experiment in table 1.

Table 1
Means and standard deviations for the variables (temperament traits, intersubjectivity)

Scale	M	SD
STQ77 Structure Of Temperament Questionnaire		
Motor Endurance, ERM	16.07	4.05
Motor Tempo, TMM	16.35	3.24
Sensitivity to Physical Sensations, SS	15.39	3.57
Social Ergonicity, ERS	16.66	3.82
Social Tempo, TMS	16.66	3.49
Emphaty, EMP	15.60	3.18
Intellectual Endurance, ERI	17.42	3.06
Plasticity, PL	14.75	3.05
Sensitivity to Probabilities, PRO	16.57	3.45
Self-confidence, SLF	15.07	2.76
Impulsivity, IMP	15.23	3.51
Neuroticism, NEU	15.51	3.02
Intersubjectivity Questionnaire		
Intersubjectivity	67.92	7.07

A correlation experiment was conducted between the questionnaire of intersubjectivity and the STQ-77 Temperament Structure Questionnaire. Table 2 presents the results of the study.

Discussion. The correlations found in research can be explained as follows. The higher is the level of *social Endurance* (ERS), the higher is the level of *intersubjectivity* in general. Social Endurance can be explained in this way: those with an

inherent ability to communicate are more socially active, have a bigger network, and are generally more socialized than others. A better socialization process should lead to more opportunities for intersubjective interaction.

Table 2
Spearman’s Correlations between the Intersubjectivity and Structure of Temperament

Structure Of Temperament (STQ77) scales	Intersubjectivity
Motor Endurance, ERM	.11
Social Endurance, ERS	.44**
Intellectual Endurance, ERI	.11
Motor Tempo, TMM	.19**
Social Tempo, TMS	.29**
Plasticity, PL	.23**
Sensitivity to Physical Sensations, SS	.19**
Empathy, EMP	.33**
Sensitivity to Probabilities, PRO	.02
Self-confidence, SLF	.01
Impulsivity, IMP	.17
Neuroticism, NEU	.12

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

The study demonstrates a positive correlation between the characteristics of temperament structure, lability group, namely the characteristics of *social tempo* (TMS) and *intersubjectivity*. The link between social tempo and intersubjectivity can be explained by the fact that the quality of communication is affected by the social pace.

The structure of temperament, emotional group, *empathy* (EMP) has a positive correlation with the characteristics of *intersubjectivity*. In essence, this is because empathic people, aware of the needs of others, create a relationship around themselves that facilitates their intersubjectivity and the intersubjectivity of others involved in the interaction.

There is a positive correlation between *intersubjectivity* and *plasticity* (PL). It can be explained by the fact that adaptive people, who are more communicative, can take into consideration the context and diversity of social situations, therefore, are better able to establish positive, prosocial, intersubjective relationships with others.

Sensitivity to physical sensations, SS scale has a positive relationship with *intersubjectivity*, that is, the higher the intersubjectivity, the higher the *physical sensations*. I. Trofimova describes this scale as the sensitivity of an individual to basic pleasures and physical sensations. Increasing scores on this scale indicate a higher likelihood of sensation-seeking behavior, the search for unusual and intense sensations, as well as the potential for taking risks [18]. This correlation

link in some way can be understood through a model of positive risk-taking behavior [4]. In this way, positive risks are characterized by benefits to well-being, potential costs that are mild in severity, and social acceptability that may engage intersubjectivity.

We also found a positive correlation between the characteristics of *motor tempo*, TMM, and *intersubjectivity*. It might be a result of a good sense of self-esteem among people in good physical shape. There is a correlation between a high motor tempo scale and good grades in athletics, which suggests good physical fitness [25]. High self-esteem makes people more inclined to engage in social interactions, which leads to intersubjectivity.

Another characteristic of the structure of temperament, which also belongs to the group of emotions – *impulsivity* (IMP) has a positive correlation with *intersubjectivity*. The interpretation of such data is hard since impulsivity can be seen as a negative trait, but within interpersonal interactions it indicates that a person demonstrates positive feelings towards others when they aren't restrained, thus creating a positive and intersubjective interaction.

In analyzing the obtained data, it can be noted that the current study is among the first in its field to look into individual typological characteristics of intersubjectivity. Recent research has indicated empirical data regarding the understanding of temperament and dispositional characteristics of adult personality types. There is a need for further empirical research based on an integrated approach to studying personality along with other psychodiagnostic techniques to generate a deeper understanding of intersubjectivity.

Conclusions. A characteristic of interpersonal interaction, intersubjectivity involves facilitating relationships that enhance the subjectivity and internal growth of participants. Researchers studying intersubjectivity show the importance of studying this construct through the lens of different perspectives, studying intersubjectivity within both a general and a positive psychological framework. A positive psychological understanding of intersubjectivity is most closely related to prosociality and supportive behavior. In addition to understanding intersubjectivity, it has become increasingly important to identify which personalities and personality traits are more likely to be involved in intersubjectivity.

The present study investigates intersubjectivity within the context of an integrated study of personality, which includes the study of temperament and personality traits. In the first stage of the study, several correlations were demonstrated between intersubjectivity and personality characteristics.

This study revealed several correlations between intersubjectivity and temperament

structure. Correlations in this study show that intersubjectivity is positively correlated with indicators of social Endurance (ERS), empathy (EMP), social tempo (TMS), plasticity (PL), motor tempo (TMM), sensitivity to physical sensation (SS), and impulsivity (IMP).

Based on the results from the study, it can be concluded that flexible, resilient, sociable, emotionally sensitive, and empathic people are more likely to engage in intersubjectivity.

Findings of the correlation data contribute to a better understanding of the subjective nature of intersubjectivity. It could be considered one of the first studies on intersubjectivity and integration of personality research in the new field of research on intersubjectivity and integrated research of personalities. Data obtained from our studies illustrate the potential for exploring intersubjectivity in the personal course more deeply.

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