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**RESEARCH OF INTERFERENCE IN PSYCHOLOGICAL PORTRAIT OF  
PERSONALITY BASED ON WAVE-SEMANTIC MODEL**

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This study researches the wave-semantic model of human personality that is considered as a first step towards the quantum-mechanical framework and its probable implementation to perform the psychological prediction in the domain of psychology of personality. Based on the previous cases of psychological portraits of well-known persons, the prognostic competencies of this model and their strong dependency on the taking into account the interference have been demonstrated. The prerequisites and the need for the transition from a wave to a quantum-like model, the significance of various quantum effects such as interference, uncertainty, and others have been observed.

**Introduction.** Despite the rapid development of information technologies and their comprehensive penetration into all spheres of human activity, including the humanities, the psychology of personality is appeared to be practically not equipped with mathematical methods and algorithms. Mathematical statistics and factor analysis traditionally used in common psychology are not very suitable for studying individuality, according to the opinion of many experts. Methods based on the search for similarity are also seemed to be insufficiently accurate due to the absolute absence of two identical personalities in the world and the practical impossibility of deducing a priori which of the differences may play the key role. One of the most important tasks of the psychology of personality is prediction, exactly, the determination of the personality's propensity to certain types of action, as well as the inclination (possibly latent) to belong to positive and negative social groups and roles. The objective of this study is to construct a mathematical model and develop software for proximate research of personalities, represented by a psychological description, in order to predict the possible evolution and behavior of those subjects.

**Basic part.** To solve the described problem, a quantum-like model of human personality is being developed. As a first step towards a quantum model, a classical wave-semantic model of personality has been designed. The main advantage of this model is simplicity, clarity, and, at the same time, ideological proximity to the postulates of quantum mechanics. The objectives of the classical model are an assessment of the fundamental applicability of the described approach for prediction in the psychology of personality; identifying the limitations of the classical wave model; substantiation of the necessity of the transition to a quantum-like model. Within the framework of the wave model, the personality is represented as a wave packet propagating in the space of classes and situations. Such a wave packet, described from the classical (deterministic) point of view, corresponds to a probability packet in the quantum-mechanical approach, and the total packet intensity at definite points in space is suitable for estimating the quantum probability amplitude of object appearance at this point. This wave packet comprises a discrete set of spherical wave sources which are individual characteristics of the personality, and the wave amplitude corresponds to the intensity of the characteristic manifestation. The waves in the packet are considered coherent with equal wave numbers. The total intensity of such a packet at selected points in space is calculated by the equation describing the multibeam interference of spherical waves. To estimate distances in a given space, the semantic similarity between terms describing personality characteristics and target classes and events is utilized. This choice is due to the fact that the framework of psychology does not have physical quantities which can be measured or calculated and it can operate only with meanings.

To evaluate the predictive potential of this model, psychological portraits of famous people are used. The choice of celebrities is explained by the fact that a person who has achieved success most

likely followed his vocation, and not accidentally joined this group. On the basis of the psychological portrait, the model tries to "predict" the belonging of the individual to a certain type of professional activities, as well as the tendency to such a negative phenomenon as suicide. For comparison, the calculation is used both with and without interference. It is shown that to predict the professional orientation of undoubtedly talented, but nevertheless, quite ordinary people, a rather good result can be obtained without taking into account the interference. At the same time, an acceptable prediction of a genius (by the example of Albert Einstein) can only be seen in a model including interference. Thus, genius can be viewed as definitely a quantum effect. Other extreme manifestations of a personality such as ultra-philanthropy, self-sacrifice, and, on the contrary, excessive cruelty, sadism, can also have a quantum nature.

The dependence of the interference pattern on the selected packet wave number that is in principle uncertain is shown. The wave model also allows identifying of other sources of indeterminacy. Uncertainty, quantum nature of extreme manifestations, other quantum properties of psychology can be considered as the prerequisites for the utilization of a quantum-like model for describing personality and psychological predictions.

All of the above allows us to conclude that the described approach is fundamentally applicable to psychological forecasting; however, the practical application requires a transition from a classical wave model to a quantum-mechanical model that is currently being developed.

**Conclusions.** The described mathematical model can be applied as a basic function in the design and development of software intended for use by practicing psychologists concerning with psychology of personality.