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“Personality” Profile of Generative Neural Network ChatGPT. *Yuliya A. Chudina*^{1,3}, *Andrey A. Nikolaev*, *Dmitry B. Chaivanov*, *Irina G. Malanchuk*^{*2}



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SUMMARY

In this work the survey results of ChatGPT using the 5PFQ were compared with the same ones for people which allowed to establish the correspondence between the "personality" of ChatGPT and the Russian social cluster

INTRODUCTION

Nowadays artificial neural networks are one of the most important and rapidly advancing types of nature-inspired technologies.

A significant technological leap in artificial intellect is associated with the development of general generative models that can be used to solve a wide range of tasks related to natural language processing including social interaction between people.

The widespread application of such artificial systems in all spheres of human life requires the development and implementations of methods for analyzing the impact of these systems on a person, who uses them in communication and other social processes.

Assuming this the important factor is the optimization of "personal" traits of ChatGPT to each user.

APPROACH

The work based on research into the applicability of psychological approaches and methods to modern neural networks.

For this, we profiled "personal" psychological characteristics of generative neural networks implemented, as example, in ChatGPT product.

Further we carried out comparative analysis of the obtained profile with the real ones based on Russian modern middle-aged men and women.

METHODS

A Five-Factor Personality Questionnaire transformed into a bipolar scale version by Heijiro Tsuji and adapted to the Russian language sample by Khromov was applied to the ChatGPT.

To avoid contextual learning and unnecessary adaptation of ChatGPT to the specific questions, the testing procedure was conducted only once in a private conversation (within a single chat).

The comparative analysis of ChatGPT's responses and the Russian sample was conducted using the Mann-Whitney nonparametric test and the k-nearest neighbors algorithm.

RESULTS

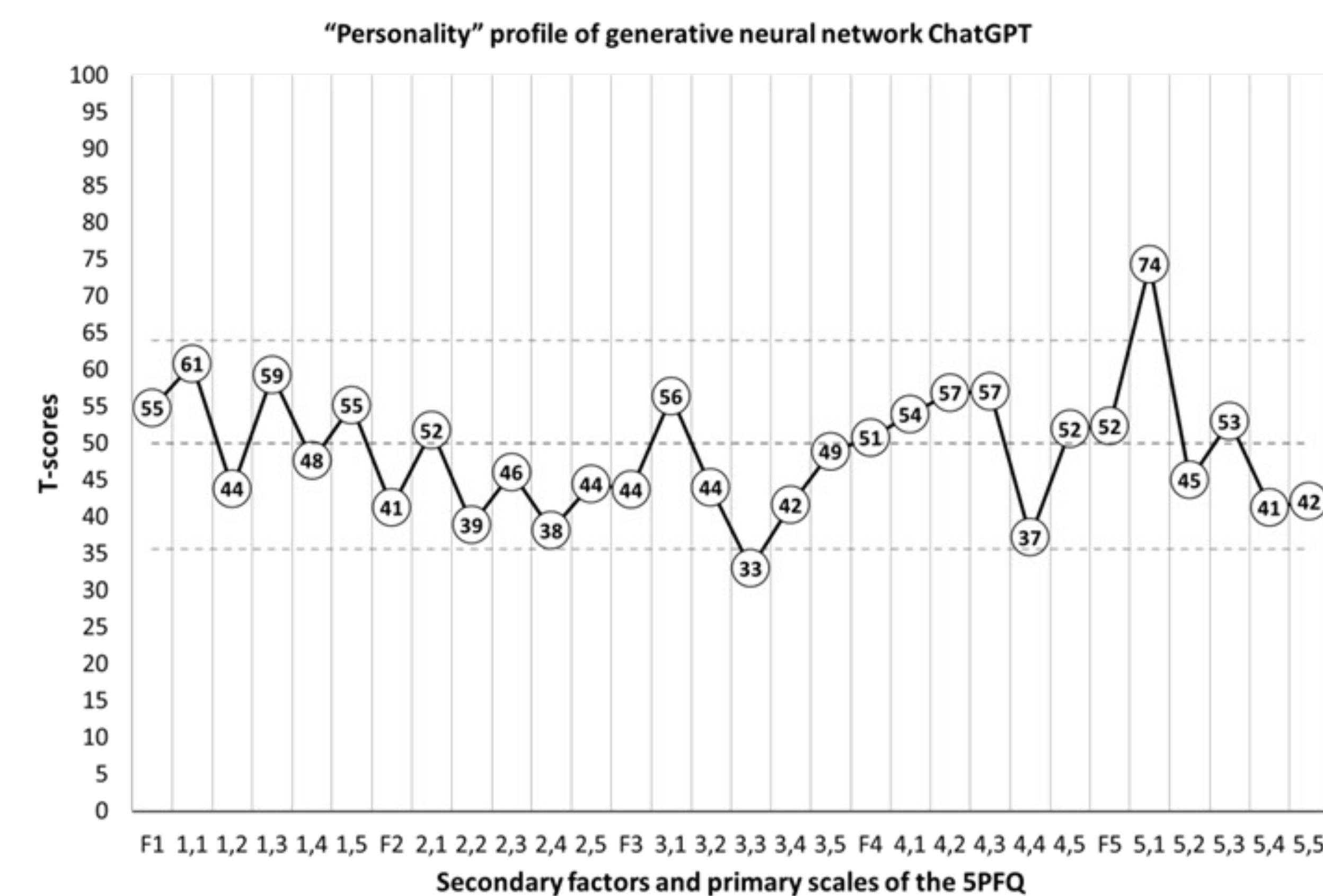


Fig. 1. ChatGPT "personality" profile. The numbers represent T-scores for the scales and factors. Dotted lines indicate the mean values corresponding to 50 T-scores (the middle line) and the deviation from the mean by 25% in each direction (upper and lower lines)

ANALYSIS

For the extroversion-introversion factor, ChatGPT is closest to the minimum values for women.

For the attachment-separation factor, it is closest to the maximum values for men.

And for the control-naturalness factor, it is closest to the average values for women.

As for the last two factors, emotionality-restraint and playfulness-practicality, ChatGPT is closest to the average values for men.

DISCUSSION

Obtained data showed that ChatGPT is similar to typical web-user [Churaeva N., 2009] characterized by ordinary motivation, averages on the extraversion-introversion scale, and significantly expressed curiosity, however, differs by lack of an active life position and ways of building effective social communication.

For improvement of communication between real users and ChatGPT, it is vital for ChatGPT to possess more positive social qualities rather than negative ones [Nass C. et al., 1997], but still not ideal, and having some flaws, just like real people [Aronson E. et al., 1966].

CONCLUSIONS

The "personality" of ChatGPT is generally similar to the average profile of Russian middle-aged Internet users.

"Personal" characteristics of ChatGPT show that it is most suitable for obtaining concise but meaningful answers to responses neither for communication purposes.

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