USING PHENOTYPOLOGY HYPOTHESES AS A PERSONALITY ASSESSMENT TOOL: THE TENTATIVE VALIDATION STUDY

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ABSTRACT
The transformational pace of modern education, healthcare, business management systems, etc., requires new approaches for prompt and reliable personality assessment. Phenotypology is one of such theories and it claims of the discovered interconnections of a person’s psychological and psychophysical characteristics on the basis of individual features of his/her phenotype. The article aim is to present some validation results for the Phenotypology hypotheses as a possible tool for personality assessment. In order to verify connections between phenotypic traits and individual behavior, we conducted the study when respondents were differentiated according to some anthropometric (facial) peculiarities and characterological features. The results were quantified and analyzed using the mathematical-statistical linear regression. The research output contains the rationale for the conclusion that there are no statistically significant correlations between some phenotypic body features and such individual psychological characteristics as aggressiveness, impetuousity, pedantry, passivity, etc. In particular, the validity of using of appropriate phenotypologic representations to predict the examined character traits was studied. The obtained results disproved the possibility to use directly the phenotypic approach for reliable characterological profiling. Though, the study outcome is tentative due to some limitations on generality. It is necessary to continue verification of the Phenotypology hypotheses with a broader experimental sample with the inclusion of various ethnic and racial groups’ representatives. However, until then, based on actual findings, the practical application of the Phenotypology statements is doubtful, at least for the purposes of character diagnosis and personality assessment.

Keywords: phenotype, phenotypology, facial features, bodily features, characterological traits, behavioral diagnosis, profiling, aggressiveness, impetuousity, pedantry, passivity.

Problem statement. The transformational pace of modern education, healthcare, business management systems, etc., requires new approaches for prompt and reliable personality assessment. The need for rapid diagnosis of psychological characteristics of students, patients, managers, sellers, customers, etc. is actualized as never before. In turn, this reanimates interest towards the idea of a direct relation between physical and psychological characteristics. Explicitly or implicitly, such an idea underlies many theoretical models of personality. However, with regard to a practice, this notion does not turn up straight and simple, does it? Bodily-psychological interconnections are the object of a complex interdisciplinary study, which requires a convergence of viewpoints on observable physique characteristics (phenotype), personality traits and behavioral patterns.

Analysis of recent research and publications. The very idea of connection between phenotype, personality and behavior is not new and goes back to the ancient Greeks. Darwinism revived the interest to this issue, which was reflected in the emergence of several relevant theories in the late nineteenth and early twentieth centuries.

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The first phase of our study \cite{Kaftanova, Cassidy, Couzens, Flint, Lloyd, Valles, O'Brien, Yule, Riva, Bellugi, Denckla, Skuse}. Unfortunately, the lack of modern scientific data and theoretical models that would claim a personality assessment and behavior prediction based on the phenotype. The exception is a recently appeared, but promising approach called Phenotypology.

“Phenotypology is a science about the interconnection of psychological and psychophysical characteristics in person’s behavior genetics on the basis of individual features of his phenotype. Phenotype is an aggregate of the biological individual’s (in particular human’s) features in every specific moment of its life. Phenotype is formed with the assistance of genotype under the influence of the environment, and is manifestation of genotype in particular conditions. It is possible to uncover the genetic program of any person’s development merely using the scientifically ascertained well-founded and strictly classified data. Phenotype technology combines multidimensional scaling, cluster and factor analysis” \cite{L-contact, 2018}.

Phenotypology claims to be a scientific basis for business management systems, offers recommendations on the specifics of recruitment, features of working with clients, etc. \cite{Kaftanova, Lucin, 2018}. The theory is popularized (mainly in the Eastern Europe) as a new way to quickly understand personal psychology and endeavors to be introduced into specific spheres of social life as guide to action. Most diagnostic criteria are associated with different characteristics of facial features (eyes, nose, lips, ears, chin, etc.) and neck length. Moreover, the authors clearly distinguish Phenotypology from Physiognomy and insist the uniqueness of the former.

“Phenotypology doesn’t have any analogues in the whole world to date and is the most efficient technology of person’s character features’ recognition and people’s behavior prediction. Possessing the knowledge of Phenotypology you possess a powerful “weapon”, latest technologies in the sphere of interpersonal relationships, family, children up-bringing, selling, employing, working with clients, business etc.” \cite{L-contact, 2018}.

**Highlighting previously unresolved parts of the overall problem the article is devoted to.** Unfortunately, up to the time of this publication, we were unable to find any scientific reports containing the empirical results of Phenotypology verification. Some of the theoretical positions are set forth on the predominantly promotional Internet-sources \cite{L-contact, Vivapersona, 2018}. Yet more or less detailed disclosure of the methodology, theoretical basis and practical application of the approach have been presented in a series of television programs on one of the popular TV channels \cite{Life Code, 2012}.

Nevertheless, the lack of published research data does not necessarily mean that the theory is untrue. The accessibility of diagnostic criteria — such as facial features and neck length — potentially makes Phenotypology’s hypotheses a promising basis for developing a profiling tool. For over twenty years, we have been developing and improving such a tool \cite{Shymko, 2017} based on understanding of the behavioral patterns through the lens of character manifestation as a hierarchic set of psychological defense mechanisms \cite{Reich, 1990}. Therefore, the goal of our research was to test the validity of some Phenotypology hypotheses for making a character diagnosis. And accordingly to the stated research goal, the purpose of the article is presentation of the carried out validation results.

**Outline of the main material and results of the study. Scientific substantiation of the methodology of the conducted research.** The first phase of our study\footnote{The study was not preregistered in any independent, institutional registry.} was theoretical, i.e. we analyzed the consistency of the conceptual model with the criteria apparatus of Phenotypology and respective logic of diagnostic inference. Here we’ve found an essential mismatch. On the one hand, Phenotypology declares a complex multi-level view on the behavior formation:

“Phenotypology is based on organs’ physiology. Teaching Phenotypology is based on four strictly successive steps: 1. **Physiology** – how the human organs are structured (for instance, chin, helix, nose, lips, eyebrows etc.) 2. **Psychophysiology** – the interconnection between the nerve system and individual physiological peculiarities. 3. **Psychology** - the immediate branch of a person’s charac-
ter. 4. Compensatory (adaptive) mechanism – the most significant index in Phenotypology. The compensatory (adaptive) mechanism, in particular, illustrates and explains the difference between the features that are founded by the nature (which sometimes are thoroughly camouflaged) and those characteristics, which are shown open” (L.-contact, 2018).

However, the factual diagnostic procedure relies on the direct conclusion about the behavior specificity based on peculiar bodily features or combination of ones. Thus, the structure of the individual behavior understanding is at odds with the structure of respective inferences of its peculiarities. The inferences are carried out based on a direct reduction of the individual psychological characteristics to the anthropometric features. The explanatory reasoning used is, in our opinion, highly debatable and to be experimentally proved. Here some of Phenotypology assumptions that we are interested in due to the possibility of their applied use in profiling:

a. narrow tip of the nose\(^2\) corresponds with the pedantic features and the propensity of the individual to distinguish small details (in our study, we signified this group of traits as – pedantry);

b. wide tip of the nose\(^3\) is associated with a lack of pedantic features and a tendency to perceive the current situation as a whole (lack of pedantry);

c. length of the neck\(^4\) is proportional to the stress resistance of an individual - the shorter the neck, the lower the tolerance to stress and the higher the impulsivity (impetuosity – lack of impetuosity);

d. protruding chin\(^5\) (together with a well-developed lower jaw) is associated with a belligerence, high level of aggression, prevalence of achievements motivation (aggressiveness);

e. receding chin indicates passive traits, predominance of failure avoidance motivation (lack of aggressiveness or passivity);

f. protruding ears\(^6\) correspond with the intellectual straightness of a individual, the propensity to perceive the world as “as it is” (naivity);

g. ears pressed to the head\(^7\) are inherent to intellectually flexible people, cunning and quirky, who perceive the world as going beyond obvious things (paranoidness);

h. ratio of nose length to ear length\(^8\) indicates prevalence of pragmatic (if nose shorter then ear) or axiological (if ear shorter then nose) style of reasoning.

The second phase of the study\(^9\) was an empirical one. The research was conducted during the period from 2013 to 2018 at Hryhorii Skovoroda State Pedagogical University in Pereiaslav-Khmelnitsky (Kyiv region, Ukraine). All studied people were undergraduate and graduate students, faculty and technical staff of the university. Initially, the sample was 306 respondents, of which 235 were selected for analysis, based on the criteria set out below. The sample comprised the respondents aged from 21 to 64 years (59.6% of women), all Caucasians and belong to the Ukrainian ethnicity. The evaluation of the bodily features and character traits was carried out by 4 experts (2 Ph.D. in psychology, 1 Ph.D. in pedagogy and 1 M.D.; each of them has more than 15 years of practical psychological and pedagogical experience).

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2 Phenotypology comes from the assumption that the narrow tip of a nose causes the sequential air access. In such conditions the stimulation of the olfactory receptors occurs in portions. This leads to a separate perception of odors and, consequently, forms a generalized tendency to distinguish details and attach importance to them.

3 Phenotypology suggests the wide tip of the nose causes mixing of air entering the body and, unlike the narrow tip, this contributes to the prevalence of a tendency towards holistic perception of the object, situation, event, etc.

4 The long neck, in the theory of Phenotypology, is regarded as a mechanical shock absorber of the head. In addition, the longer neck is the longer system of blood vessels connecting the heart and the brain. This supposedly reduces cardiac intensity during stress.

5 Chin, as part of the lower jaw, is considered within the framework of Phenotypology, in fact, in Lobrostan’s sense.

6 In the opinion of phenotypologists, a person with protruding ears perceives auditory information, which is fundamentally relevant to what is accessible through the visual channel of perception. Thus, the audio stimuli correspond with the visual stimuli and vice versa. This leads to the formation of a worldview, which is characterized by visibility, simplicity, straightness, etc.

7 According to Phenotypology, a man with ears pressed to his head, hears more than he can see. So, a directly not visible part of reality forms such representation about it which assumes its explicit and latent dimensions.

8 Phenotypology is based on the assumption that olfactory stimulation is associated with evaluative sensual function of thinking, meanwhile auditory stimulation is associated with non-emotional rational reasoning.

9 The study complies with all relevant ethical regulations. All data collection and study procedures were approved by the Ethics Commission of Hryhorii Skovoroda State Pedagogical University in Pereiaslav-Khmelnitsky. Each participant provided written consent.
On the one hand, we assessed the presence and degree of respective characterological traits, which are allegedly determined by or at least connected with the specified facial and neck features. Herewith, we proceeded from the fact that such traits as impetuosity, aggressiveness, passivity and pedantry obviously correspond to the central features of the so-called pure character types described by Wilhelm Reich (1990), namely – hysterical, phallic-narcissistic, passive-feminine and compulsive (respectively). The same traits are inherent to representatives of the so-called mixed types of character, whose behavioral repertoire is expanding due to the action of other factors (including above naivety, paranoidness, pragmatic and axiological way of thinking, etc.). Before the current research, Reich’s model was adapted by us for the diagnostic identification of pure and mixed types of character through the standardized observation of bodily, mimic, paralinguistic, and certain speech characteristics (Shymko, 2017).

Using this adaptation, experts had carried out diagnostics of each respondent and summarized diagnostic opinion on the degree of a particular characterological trait on the following scale: 1) there are no signs; 2) signs are mild; 3) signs are pronounced (acute). Thus, in further analysis, it was not only the type of character of a respondent that was considered, but the degree of behavioral manifestations of respective features as well. Those respondents for whom expert opinions differed, either qualitatively or even quantitatively, were excluded from the sample. In this way, we tried to increase the reliability of our findings.

On the other hand, we carried out assessment of the respondents’ bodily features according to the criteria of Phenotypology set forth in the television programs (Life Code, 2012). Thus, in assessing the tip of the nose, we identified three options – a narrow, medium and wide (fig. 1). We also distinguished three chin variants: protruding, normal and receding (fig. 2). Nose length we measured from a nose bridge to the tip and an ear length was determined by the maximum straight distance between its upper edge to the lower border of the earlobe (fig. 3). In both cases, measurements were made using a conventional measuring ruler with an accuracy of 1 millimeter, after which we compared the results and distinguished the following positions: 1) the nose is longer than the ear; 2) the nose is equal to the ear; 3) the nose is shorter than the ear.

However, in available sources of Phenotypology, guidelines for the measurement of the anthropometric features are not always presented clearly and unambiguously. For example, difficulties arose in estimating the length of the neck – short, average, and long. For this purpose, we used a technique that allows one to differentiate the length of the neck, prorated to other anthropometric features of the same body – the palm width (Lamport, 2014). Namely, each respondent was asked to place own hand vertically on the neck right under the chin. If the distance to the upper edge of the jugular cavity was equal to palm width (four fingers wide barring the thumb), we conclude such a case.

Fig. 1. Nose tip features: narrow, medium, wide.
as an average neck. If that distance was smaller than palm – short neck. If it was bigger – long neck.

To assess the ears protrudiness, we used the otoplastic method of rapid diagnosis of lop-earedness (Plastic surgery, 2010). This technique, as well as the evaluation of the neck length, involved a comparison of different bodily features of one person. To wit, we used a comparison of the index finger thickness and the width of the space between the ear and the surface of the head. If the finger did not fit into this space, the ears were evaluated as pressed to the head. If the finger fitted - normal ears. If it fitted and there left free space between the finger and the auricle - protruding ears.

Multiple regression analysis was applied to the data obtained, since we were interested in the question whether it is possible to use the facial and neck features to predict the psychological characteristics of the subjects. The cases were considered when regression was statistically significant.

**Impetuosity**

As we can see in the Table 1, the significance of regression is conditional here (F=2.791, p=0.027). Adjusted Table 1.

**Impetuosity, ANOVA**

| Model   | Sum of Squares | df  | Mean Square | F     | Sig. |
|---------|----------------|-----|-------------|-------|------|
| Regression | 6,576          | 4   | 1.644       | 2.791 | .027 |
| Residual   | 133,700        | 227 | .589        |       |      |
| Total     | 140,276        | 231 |             |       |      |

a. Dependent Variable: impetuosity
b. Predictors: (Constant), neck_length, ears_protruding, nose_tip_narrowness, chin_shape
$R^2 = 0.030$, which means that approximately 3% of the variance in dependent variable (DV) is explained by independent variables (IVs).

The only one significant predictor of impetuosity was found – chin shape ($\beta =0.184$, $p=0.01$). Other predictors were not significant as we can see from Table 2.

### Impetuosity, Coefficients*

| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B |
|-------|-----------------------------|---------------------------|---|------|-------------------------------|
|       | B     | Std. Error | Beta |     | Lower Bound | Upper Bound |
| 1     |       |            |      |     |              |              |
| (Constant) | .412 | .337 | 1.221 | .223 | -.253 | 1.076 |
| ears_protruding | -.117 | .086 | -.091 | -1.360 | .175 | -.286 | .052 |
| nose_tip_narrowness | .079 | .067 | .082 | 1.185 | .237 | -.052 | .210 |
| chin_shape | .246 | .095 | .184 | 2.591 | .010 | .059 | .434 |
| neck_length | .074 | .084 | .064 | .870 | .385 | -.093 | .240 |

a. Dependent Variable: impetuosity

### Aggressiveness

The significance of regression here is much better in comparison with the previous parameter, i.e. it is $F=6.729$, $p<0.001$ (Table 3). Adjusted $R^2 = 0.090$, that is, about 9% of the variance in DV is explained by IVs.

In accordance with the data in Table 4, when levels of aggressiveness were predicted, it was found that chin shape was the only significant predictor ($\beta =0.283$, $p<0.001$).

### Aggressiveness, ANOVA*

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|-------|----------------|----|-------------|---|------|
| 1     | Regression     | 14.815 | 4 | 3.704 | 6.729 | .0001 |
|       | Residual       | 124.939 | 227 | .550 | |
|       | Total          | 139.754 | 231 |      |      |

a. Dependent Variable: aggressiveness

b. Predictors: (Constant), neck_length, ears_protruding, nose_tip_narrowness, chin_shape

### Aggressiveness, Coefficients*

| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B |
|-------|-----------------------------|---------------------------|---|------|-------------------------------|
|       | B     | Std. Error | Beta |     | Lower Bound | Upper Bound |
| 1     |       |            |      |     |              |              |
| (Constant) | -.182 | .326 | -.560 | .576 | -.825 | .460 |
| ears_protruding | -.042 | .083 | -.033 | -.512 | .609 | -.206 | .121 |
| nose_tip_narrowness | .070 | .064 | .073 | 1.084 | .279 | -.057 | .197 |
| chin_shape | .379 | .092 | .283 | 4.127 | .000 | .198 | .561 |
| neck_length | .135 | .082 | .118 | 1.657 | .099 | -.026 | .296 |

a. Dependent Variable: aggressiveness
As we can see, the results of multiple regression analysis prove that the prediction of psychological characteristics cannot be realized through such bodily parameters as: neck length, protrusion of the ears and the shape of the nose tip. At the same time identified statistical regularities for the chin shape, in our opinion, too, are not reliable enough that the parameter could be used as a practical tool for profiling. Our skepticism on this issue is based on low rates of $R^2 < 0.10$ and insufficiently high rates of the predictor's strength $\beta < 0.300$.

**Conclusions.** Based on the above findings, we believe that the practical application of Phenotypology statements is doubtful at the very least for the purposes of character diagnosis and personality assessment. Thus, we consider the use of the Phenotypology approach for practical performing of differential psychological examination has not been sufficiently substantiated yet.

**Prospects for further research.** Results of the study are tentative due to respective Limitations on Generality. We believe it is necessary to continue verification of the Phenotypology hypotheses on a broader experimental sample with the inclusion of various ethnic and racial groups’ representatives. As well it is necessary to expand the set of diagnostic attributes (it is stated that the criterial apparatus of Phenotypology includes more than 140 such features, however, the number of the published is an order of magnitude less). In addition, when forming the sample, it is necessary to consider such moments as possible people’s surgical or traumatic interventions that changed their appearance. We did not clarify this issue in the formation of the current sample. In addition, a fundamentally important issue is the correct application of phenotypic criteria and attributes, the idea of which we have formed from the only available source – television broadcasts. Therefore, the direction of further verification of the Phenotypology hypotheses will be determined in many respects by the appearance of relevant scientific publications that reveal the methodological and practical specifics of the approach.

**References:**

Cassidy, S & Morris, C. 2002. Behavioral phenotypes in genetic syndromes: genetic clues to human behavior. Advances in Pediatrics. 49(1), pp. 59-86.

Couzens, D. 2014. Behavior Phenotype: A Synthesis of Research to Understand Age-Related Change in Behavior in Several Syndromes. 5th March. Wiley Online Library. [Online]. [25 January 2019]. Available from: https://doi.org/10.1111/jppi.12066

Flint, J. 1998. Behavioral phenotypes: conceptual and methodological
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ИСПОЛЬЗОВАНИЕ ГИПОТЕЗ ФЕНОТИПОЛОГИИ В КАЧЕСТВЕ ИНСТРУМЕНТА ОЦЕНКИ ЛИЧНОСТИ: ВАЛИДИЗАЦИОННОЕ ИССЛЕДОВАНИЕ

АННОТАЦИЯ

Современные темпы трансформации образования, здравоохранения, систем управления бизнесом и других сфер жизнедеятельности требуют новых подходов, позволяющих быстро и надежно оценить личность. Фенотипология предположительно является одной из таких теорий, которая среди прочего утверждает наличие взаимосвязей между психологическими и психофизическими характеристиками в генетике поведения человека, обнаруживаемых на основе индивидуальных особенностей фенотипа. Целью данной статьи является изложение результатов проверки ряда гипотез фенотипологии, как возможного инструмента для оценки личности. Чтобы проверить наличие связей между фенотипическими признаками и индивидуальным поведением, было проведено валидизационное исследование, в котором респонденты дифференцировались в соответствии с некоторыми антропометрическими (лицевыми) особенностями и характерологическими поведенческими проявлениями. Полученные результаты были квантифицированы, количественно оценены и проанализированы с помощью математико-статистической методологии линейной регрессии. Результаты проведенного изучения содержат обоснование для вывода об отсутствии статистически значимой взаимосвязи между исследованными фенотипическими чертами тела и такими индивидуально-психологическими характеристиками, как агрессивность, импульсивность, педантичность, пассивность и др. А именно, проанализированная обоснованность использования соответствующих гипотез фенотипологии для построения прогностического вывода в отношении наличия или отсутствия определенных черт характера. Полученные результаты не подтверждают возможность прямого использования фенотипологического подхода для достоверной характеристикой диагностики. Вместе с тем, результаты ис-
Використання гіпотез фенотипології як інструменту оцінки особистості: валідизаційне дослідження

Анотація

Сучасні темпи трансформації освіти, охорони здоров’я, систем управління бізнесом та інших сфер життєдіяльності вимагають нових підходів, що дозволяють швидко і надійно оцінити особистість. Фенотипологія імовірно є однією з таких теорій, яка підтверджує наявність взаємозв’язків між психологічними і психофізічними характеристиками в генетиці поведінки людини, які виявляються на основі індивідуальних особливостей фенотипу. Метою даної статті є виклад результатів перевірки ряду гіпотез фенотипології на більш широкій експериментальній вибірці з включенням до неї представників різних етнічних і расових груп. Однак, за відсутністю проведення такого дослідження, ґрунтуючись на отриманих фактичних даних, практичне застосування підходу фенотипології для побудови прогнозичного висновку щодо наявності або відсутності певних рис характеру. Отримані результати не підтверджують можливість прямого використання фенотипологічного підходу з метою достовірної характерологічної діагностики. Разом з тим, результати дослідження є попередніми в зв’язку з певними обмеженнями вибіркової сукупності. Необхідно продовжити перевірку гіпотез фенотипології на більш широкій експериментальній вибірці з включенням до неї представників різних етнічних і расових груп. Однак, за відсутністю проведення такого дослідження, грунтується на отриманих фактичних даних, практичне застосування підходу фенотипології вдається сумісним, принаймні, для цілей діагностики характеру і оцінки інших параметрів особистості.

Ключові слова: фенотип, фенотипологія, риси обличчя, особливості тіла, риси характеру, поведінкова діагностика, профайлінг, агресивність, імпульсивність, педантичність, пасивність.