

A professional identity stereotype in a cognitive linguistic aspect

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Abstract: The paper outlines a self-identity pattern of a professional stereotype “*Programmer*” based on the results of the survey, conducted at the Computer Technologies department of Polytechnic University (Ukraine). The survey design outlines the physical, mental, professional properties of a *programmer*. The stereotype cognitive core represents the notion of a young man, 20-30 years of age, creative, plodding and purposeful, but exhausted physically and often lonely.

Keywords: professional stereotype; categorization; autostereotype; social perception; empirical data; association experiment; survey; self-identity; verbal image; external and ethical characteristics.

Introduction

The object of our research is language representation of a professional stereotype, which is a special case of sociocultural stereotype, formed on the basis of a bifurcated network of concepts and beliefs that constitute a person’s mental reality. A social category and a cognitive construct, formed under the invariable influence of language according to cultural patterns, a stereotype attracts the interest of various disciplines the findings of which are important for the study of stereotypes.

Brief outline of stereotype research history and theory

Coined in 1798 by the French printer Didot, the word “stereotype” was used to describe a printing term that involves fixed casts of material to be reproduced. A century later, the word, with a minor change, as “stereotypy” was used in psychiatry to denote the persistent repetition of an act for no obvious purpose. [1]

Since the term “stereotype” was introduced in social sciences by the American journalist Walter Lippmann in 1922, the term has acquired an extensive terminological meaning. In his “Public Opinion”, Lippmann defines stereotypes as “pictures in our head” that function as symbolic mechanisms arising images: “...we pick out recognizable signs out of environment. The signs stand for ideas, and these ideas we fill out with the stock of images”. [2] Walter Lippmann determined the cognitive, semantic, emotional and cultural nature of a stereotype. From this time on, scientists focus on different aspects of stereotypes and the process of stereotyping.

In the first half of the 20th century, researches dwelt on the conformity of stereotypes with reality. The American psychologists Daniel Katz and Kenneth Braly who studied racial bias in 1930s, regarded stereotypes as uniform patterns of social prejudice based on ascribed to a social category certain racial, professional and gender traits.

In 1950s the research of stereotypes was aimed at pragmatic value as stereotypes were acknowledged socially determined, logical forms of cognition.

Later, in the 1960s, psychologists accentuated the constant character of stereotypes that regulate a person’s behavior and emotional state. Some psychological research (R. Taguiri, J.H. Turner, S. Moscovici, P. N. Shiherev) resulted in the recognition of a stereotype as an

inalienable element of an individual or group perception, that is formed according to cultural and ethnic patterns against the background of expectations and opinions of a social category. With the development of semiotics in the 1970s (M. Riffaterre, G. Genette, R. Barthes), stereotypes are studied from the view of their cultural significance. Yu. Lotman considered stereotypes represented by schematic cultural codes that are reproduced in texts. A recognized role of stereotypes in information transfer [3], led to scholars' interest in the verbal representation of stereotypes.

The next decades witnessed a cognitive revolution in humanities. Since that time, stereotypes have been perceived as cognitive structures (studied by H. Tajfel, J. Turner, T. Lilly, D. Taylor, D. M. Maki). Researchers' interest directed to the motivation of stereotyping. At the end of the 20th century stereotyping was considered a cognitive process with social consequences.

In the 21st century, with the recognition of the universal role of language to store, interpret, and uncover mental processes and categories (W. Chafe, Ch. Fillmore, G. Lakoff, R. Langacker, and L. Talmy), researchers focus on the verbal representation of stereotypes and their influence on the communication processes. The cognitive linguistics assumption important for the study of stereotypes is that language structures serve the function of expressing meaning; hence, the mapping of meaning and form is the subject of linguistic analysis. This makes the cognitive linguistic approach leading in investigating stereotypes on the basis of language data.

Stereotype as the result of social categorization

Since the middle of the 20th century, social psychologists (Allport, Campbell, Tajfel) have recognized stereotyping involves mental processes of categorization and comparison. As the result of categorization, a stereotype represents a social category with evaluative and behavioral implications based on perceptually comprehended characteristics, such as gender, race, age, etc. People's individual characteristics and their group memberships play a significant role in shaping attitudes, values, beliefs, and behavior.

Categorization is the basic notion of human cognitive activity connected with the mental operation of detecting similarities and distinctions with already established categories. The human mind works "with the aid of categories... Orderly living depends on it". [4] For the sake of functional necessity, discrete social categories serve to simplify, structure, and regulate our understanding of other people. "Category distinctions influence both perception of and behavior toward category members, individually and collectively. Social categorization underlies the phenomena of group cognition and social stereotypes". [5]

Kinds of stereotypes and methods of study

Abundant works have been devoted to ethnic and gender stereotypes. These kinds of stereotypes are extensively investigated by experimental methods; the most popular among them are associative experiment survey, semantic differential, factorial analysis, sorting study. The investigation of stereotypes on survey data was first applied by Katz and Braly. Their study showed that ethnic groups are assigned traits that seem to respondents the most typical. Respondents showed bias against an out-group, ascribing positive stereotypes to their own group. Later, identical results were received by other researchers (M. Gilbert, 1951; M. Karlins, T.L. Coffman, G. Walters, 1969).

The early studies of gender stereotypes conducted by Sheriffs and McKee (1957) was based on a list of 200 adjectives generally ascribed to women and men. Men were seen as frank, straightforward, rational, competent, and bold, while women were depicted as emotionally warm and concerned with social customs. [6] The research of Sheriffs and McKee revealed male stereotypes were evaluated more positively than those of women. Gender stereotypes

can limit the types of careers that people select and can facilitate or inhibit the perceptions of an individual's effectiveness.

The basic feature for social evaluation determines the kind of a stereotype in any culture. Thus researchers distinguish social class stereotypes (Dussek, 1983; Colman, 1987), stereotypes of the aged (Lips, 1988; Kay, 1982), physical appearance stereotypes (McArthur, Baron, 1983; Zebrowitz, Vionescu, Collins, 1995), people's personality types "extraverts/introverts" (Cantor, Mischel, 1979), occupational/professional stereotypes, etc. All of the mentioned types are interconnected and dependable.

Professional stereotypes

From the perspective of social identity theory, professional identity is the associating of self with a certain professional group. This means adoption of attributes and behaviors ascribed to a professional group. Identification with a professional group builds up self-esteem and maintains emotional significance.

The students, training for a definite profession, "derive a definition of self from their membership of a particular professional group". [7]

As Turner states, perceived roles and responsibilities of professionals can be influenced by stereotypes or social perceptions that are commonly held about a group, but often oversimplified, prejudiced or judgmental. [8] When students of different professions interact, they make comparison and draw distinctions between the characteristics of their professional group (autostereotype) and other groups (heterostereotype). This comparison was called by Henri Tajfel intergroup differentiation, in the process of which the attributes and behaviors of the group a person identifies with is accepted favorably. The generalized idea of a professional type comprises ethic and temperament traits, gender and ethnic characteristics influenced by a certain culture.

The concept of stereotype in cognitive linguistics

In a cognitive linguistic aspect, a stereotype is regarded as the result of socio-cultural reality interpretation within the scope of cognitive models by means of linguistic signs (R. Tagiuri, 1969; S. Moscovici, 1984; J. H. Turner, 1994; P. N. Schiherev, 1999; V. V. Krasnyh, 2002). Arisen from a universal human ability to reduce and simplify incoming information, stereotype represent simplified and reduced information about a social group (Quasthoff 1978, Putnam1988).

Functioning in symbolic forms of language, stereotypes are realized in definite contexts (Coulmas 1981). Representing the image of a group in its verbal form, a stereotype forms the center of semantic and cognitive associations (H. Tajfel 1981, F. Coulmas 1981, Teun A. van Dijk 1984). Stereotypes are maintained and changed through language and communication.

The insufficiently studied language role in stereotype formation and circulation makes the language representation of research on stereotypes a topical issue of cognitive linguistics: "Despite the clear importance of language as the basis of stereotyping, empirical research has not been as abundant, or as integrated into other approaches to stereotyping as it might be".

[9]

In a cognitive linguistics view, stereotypes are classified into three types: (1) speech stereotypes that condition verbal and non-verbal behavior of participants in a communication act; (2) stereotypes as ideas that anticipate explication of the situation; (3) stereotypic images that emerge on basis of typical representation of social groups. 10] A stereotypic image is regarded as an emotionally perceived stable set of external and ethical characteristics. The analysis of a stereotypic image results in a set of identical descriptors that depict external and ethical characteristics. External characteristics comprise physical (face features, eyes, figure),

kinetic (gestures, movements), clothing peculiarities. Ethical characteristics include moral qualities and personal distinctive features.

Since the aim of the study has been to receive comprehensive information about the current image of a programmer, an association experiment was applied to provide data for analysis.

Survey as an empirical method of cognitive linguistics

Developed two centuries ago, the survey method has become an integral part of cognitive linguistic research. The successful application of this experimental method in psychological and sociological research proved the appropriateness of the method for registering feelings and ideas existing in the mind of respondents united by a particular idea. Thus, the experimenter receives access to the content of the stereotype under study to form idea of its cognitive structure.

In cognitive linguistics, the survey method is applied to elicit cognitive phenomena on language data. The fixation of verbal reactions to the mathematically processed questions can relevantly and accurately represent observed phenomena.

Acquiring achievements of psychology, cognitive linguistics considers verbal portraying of a stereotype the process directed by attention to the content of a stereotype. According to R. Langacker, verbal expression evokes the definite part of a stereotype content in which discrete elements are isolated by a focus of attention. [11]

Presentation of results

The survey procedure consists of the following steps: (1) working out the hypothesis, (2) arranging the survey design, (3) conducting the survey, (4) data processing.

The purpose of our work has been to depict a self-identity pattern of a programmer as a professional stereotype based on the survey results. It was hypothesized that the stereotype of a programmer exists not only as a set of traits and characteristics, but also comprises images and names of famous figures in the sphere of programming. The psychological premise of our study is that the stereotype verbal representation is predetermined by the students' group affiliation.

Arranged in the form of the chart, the survey design outlines various properties of a *Programmer*. The questionnaire included cues on physical (face, clothes, figure, and hairstyle), personality qualities (including sex and age), job description (workplace, duties, and salary), personal life characteristics (surrounding, leisure time). The last row was assigned to complete with an example of an exemplary programmer.

Table 1. Questionnaire

Age		Sex	
Personality qualities			
Look			
Face	Clothes	Figure	Hair style
Job			
Workplace		Duties	
Salary			
Rest			
Environment (friends, family)			
Example of typical programmer			

The experiment was conducted at the department of computer technologies of Odessa National Polytechnic University. Seventy-three students in their second year, aged 19-21, and both sexes represent the survey sample. The participants were asked to fill in the questionnaire anonymously, but marking a sex, in the English language in 20-minutes time.

The dependent variable of the survey is the selection of respondents, belonging to one age and training, while the dependent is participants' sex. As the mathematical processing of the results shows that only 4% of the respondents think of a programmer as a woman and 5% give equal rights to both sexes. Taking into consideration the fact, that overwhelming majority of the respondents are male (98 % of participants), we can say that the professions connected with programming in Ukraine are associated with masculinity. Published 14 years ago, the "Encyclopedia of Sex and Gender: Men and Women in World's Cultures" declares spheres of labor in Ukraine are frequently divided along gender lines. This trend is influenced by cultural norms in the area of education. Women are considered especially suited for the humanities, especially languages and pedagogy. Science is often viewed as a male sphere. Men dominate in universities departments of computer science, engineering, mathematics, and physics. [12] As we see, gender stereotypes are very persistent and still influential in the professional spheres of Ukraine.

The responses concerning age indicate that participants associate themselves with the professional category: 83 % of the answers describe a programmer as a young person of 21-35 years of age.

The responses hold both positive and negative assumptions about the occupation students are trained for. As self-image of the group is conceived positively, thus the prevalence of positive assumptions is conditioned by identification with this category.

The largest quantity of responses concerns personal and professional qualities of a programmer. The answers are grouped in accordance with the semantic meanings of words describing the personality of a programmer. Thus, we receive high intellectual potential, emotional balance, a working potential, which is described positively in 97% of answers.

The major number of responses depicts a high working potential (42% of ascribed to a programmer qualities). A programmer is as hard working, persistent, concentrated, punctual, responsible and ambitious person. The mentioned negative trait (laziness) can be explained as a self-aware judgment on their own weaknesses.

Table 2. Professional qualities of a programmer as represented in the survey

Working potential			
positive		negative	
multiple instances		multiple instances	
hardworking (hard worker) / plodding	7	lazy	7
purposeful(ness)	7		
persistent / insistency	5		
attentive / concentrated/ serious	4		
punctual / rigorous	3		
responsible / reliable	3		
isolated instances			
ambitious, organized, active, artful			

Thirty-five percent of the qualities ascribed to a programmer indicate a high intellectual ability. A programmer is smart and reasonable, curious and willing to learn, educated and creative. Excessive logical thinking seems unwilling.

Table 2. Intellectual abilities of a programmer as represented in the survey

High intellectual potential	
smart / intelligent / clever reasonable	16

curious (curiosity)	6
willing (loving) to learn/self-developing / open to new information	5
isolated instances	
analytical, logical, educated, creative, thoughtful, excessive logical thinking	

Twenty-three percent of the responses describe a programmer's tranquility and stress-resistance.

Table 3. A programmer's emotional stability as represented in the survey

Emotional balance	
calm	17
patient (patience)	3
isolated instances	
phlegmatic, stress-resistant, temperate / even temper	

As seen by respondents, a programmer is introvert, kind and friendly, honest and shy, he/she may be selfish and stubborn, strange and sloven.

Table 4. A programmer's personal qualities as represented in the survey

Personality traits			
positive traits		negative traits	
kind / good-natured/ friendly/ cooperative	6	introvert/ unsociable / not talkative / closed from people or world	8
communicative / open	3		
isolated instances		isolated instances	
determined, optimist, honest/ fair, charismatic, modest / shy		selfish, stubborn / wayward, noisy, sloven, little strange	

As for the physical appearance, 87% of participants give rather a detailed account of an image, while 13% of respondents do not picture the stereotype at all. Students portray a programmer rather overweight bearded long-haired man wearing glasses and showing obvious signs of fatigue (red eyes, grey, unshaven, sleepy face). The beard and themoustache are in fashion, this can explain this feature in the description. Some respondents provide an evaluative description (e.g., hipster look, careless and sloppy hairstyle).

Table 5. Look of a programmer as represented in the survey

Figure	
fat/fatty	17
thin/ skinny/slim	14
athletic/ sportive	7
Face	
glasses	16
beard	16
long hair	15
short cut	9
moustache	3
oval/oblong	3
bags under eyes	3
smiling	3

isolated instances
round face, red eyes, thoughtful/clever, unshaven, pleasant, serious, young, grey, sleepy

Some respondents provide an evaluative description (e.g., hipster look, careless and sloppy hairstyle, ruffled or weird clothes).

A programmer's dress is described mainly as comfortable casual T-shirts and jeans (57 % of respondents).

In association with themselves, the respondents give a rather detailed account of a programmer's duties and place of work. A programmer works for Google, Blizzard (a games' development company) or as a freelancer. The major part of respondents (86%) consider the work of a programmer is well paid.

The responses about the social surroundings show a programmer is seen frequently alone (no friends and family – 35 %) or not having many friends (27%). Only 1 % thinks a programmer has a big family. His/ her friends usually belong to the same professional or working sphere.

The leisure-time activities as described by respondents, vary from sports activities and travelling (56%) to playing computer games and surfing the Internet (33 %), and activities (11%) as reading, sleeping, etc.

The exemplary programmer, as seen by respondents, is successful and famous. Only 3% of the participants cannot name an exemplary programmer. For 25% of students an example is their friend. The most frequently mentioned names (William Gates, Steven Jobs, Gabe Newell, Steve Wozniak) are known for their success in programming as well as entrepreneurship. The answers are mediated by cultural discourse representing the information from films, the Internet and TV programmes.

According to the survey, the stereotype cognitive core represents the notion of a young man who is 20-30 years of age.

Professionally, a programmer is a creative, plodding, punctual, purposeful and self-developing worker. He is considered ambitious, persistent and determined. A programmer shows an analytical view of life and sometimes - excessive logical thinking. He is intelligent, educated and willing to learn.

As a person, a programmer is a good-natured introvert, modest, not talkative, a stress-resistant person of even temper. His not numerous drawbacks comprise stubbornness, unsociability, selfishness and untidiness.

In a physical aspect, a programmer is a slim, bearded man with short haircut, wearing glasses. Devoting almost all his time to work, he looks exhausted, his eyes are red and weary, his face is unshaven and grey. He wears unremarkable casual clothes. However, a programmer may look like a well-groomed hipster. The cause of this discrepancy lies in differences of respondents' intrareception.

In personal life, a programmer is single, because family is an option for him. He has few friends, also programmers. His life goal is, as stated by students "to create the future".

Conclusions

The results of the survey can be considered, with some differences, universal, because young people's worldviews in a globalization period when easy ideas and interchanging attitudes are formed under the influence of world culture. Less investigated than ethnical, gender and social stereotypes, professional stereotypes constitute a vast field of research in linguacognitive and cultural respects.

References:

- [1] Ashmore, R. D. & Del Boca, F. K. (2015). Conceptual Approaches to Stereotypes and Stereotyping, *Cognitive Process in Stereotyping and Intergroup Behavior*. (Ed. D. L. Hamilton). London and New York: Psychology Press, pp. 1-38.
- [2] Lippmann, W. (1965). *Public Opinion*. New York: McMillan.
- [3] Lotman, Ju. M. (1970). Struktura hudozhestvennogo teksta. Moskva: Iskusstvo, Serija: *Semioticheskie issledovanija po teorii iskusstva*, p. 21.
- [4] Allport, G. W. (1958). *The Nature of Prejudice*. Garden City. NY: Doubleday Anchor, 20.
- [5] Brewer M. B. (1996). Ethnocentrism and Prejudice: A Search for Universals, *Social Psychology of Prejudice: Historical and Contemporary Issues*. (Ed. Christian S. Crandall), Lewinian Press, p. 89.
- [6] Best, D. L. (2003). Gender Stereotypes. *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*. (Ed. Emblar C. R., Kluwer Acedemic). New York: Plenum Publishers, pp. 11-27.
- [7] Hean, S. (2009). The measurement of Stereotypes in the Evaluation of Interprofessional Education, *Interprofessional Education: Making it Happen*. (Ed. Bluteau P., Jackson A.). Palgrave Macmillan, p. 145.
- [8] Turner, J. C. (1999). Some current issues in research on social identity and self-categorization theories. (Eds. Ellemers N., Spears R., Doosje. B.) *Social Identity, Context, Commitment, Content*. Hoboken, New York: Wiley-Blackwell, pp. 6-34.
- [9] Stangor, Ch. & M. Schaller (1996). Stereotypes as Individual and Collective Representations. *Stereotypes and Stereotyping*. (Eds. C.Neil Macrae, Charles Stangor, Miles Hewstone). New York, London: The Gilford Press, p. 12.
- [10] Bartmiński, J. (1997). Jetnocentrizm stereotipa: pol'skie i nemeckie studenty o svoih sosejdjah, *Slavjanovedenie*, Moskva: Indrik, N 1, p. 178.
- [11]. Langacker, R. W. (1961). *Concept, Image, Symbol. The Cognitive Basis of Grammar*. Lippmann W. *Public Opinion*. New York: McMillan, p. 218.
- [12]. Phillips, S. D. (2003). Ukrainaians. *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*. (Ed. Emblar, C. R. Kluwer Acedemic.) New York: Plenum Publishers, p. 933.

Bibliography:

1. Allport, G. W. (1958). *The Nature of Prejudice*. Garden City. NY: Doubleday Anchor.
2. Ashmore, R. D. & Del Boca, F. K. (2015). Conceptual Approaches to Stereotypes and Stereotyping, *Cognitive Process in Stereotyping and Intergroup Behavior*. (Ed. D. L. Hamilton). London and New York: Psychology Press, pp. 1-38.
3. Bartmiński, J. (1997). Jetnocentrizm stereotipa: pol'skie i nemeckie studenty o svoih sosejdjah, *Slavjanovedenie*, M.: Indrik, N 1, pp. 12-24.
4. Best, D. L. (2003). Gender Stereotypes. *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*. (Ed. Emblar C. R., Kluwer Acedemic). New York: Plenum Publishers, pp. 11-27.
5. Brewer M. B. (1996). Ethnocentrism and Prejudice: A Search for Universals, *Social Psychology of Prejudice: Historical and Contemporary Issues*. (Ed. Christian S. Crandall), Lewinian Press, pp. 79-95.
6. Hean, S. (2009). The measurement of Stereotypes in the Evaluation of Interprofessional Education, *Interprofessional Education: Making it Happen*. (Ed. Bluteau P., Jackson A.). Palgrave Macmillan, pp. 143-164.
7. Langacker, R. W. (1961). *Concept, Image, Symbol. The Cognitive Basis of Grammar*. Lippmann W. *Public Opinion*. New York: McMillan.
8. Lotman, Ju. M. (1970). Struktura hudozhestvennogo teksta. Moskva: Iskusstvo, Serija: *Semioticheskie issledovanija po teorii iskusstva*.

9. Phillips, S. D. (2003). Ukrainaians. *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*. (Ed. Emblar, C. R. Kluwer Acedemic.) New York: Plenum Publishers, pp. 930-939.
10. Turner, J. C. (1999). Some current issues in research on social identity and self-categorization theories. (Eds. Ellemers, N., Spears R., Doosje. B.) *Social Identity, Context, Commitment, Content*. Hoboken, New York: Wiley-Blackwell, pp. 6-34.
11. Stangor, Ch. & M. Schaller (1996). Stereotypes as Individual and Collective Representations. *Stereotypes and Stereotyping*. (Eds. C.Neil Macrae, Charles Stangor, Miles Hewstone). New York, London: The Gilford Press, pp. 3-41.

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