

# Experimental verification of the ability

## to modify existing topical preferences using individually organized unconscious information impact

*Verificación experimental de la capacidad de modificar las preferencias tópicas existentes utilizando el impacto de la información inconsciente organizada individualmente*

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### Abstract

**Introduction:** the current study aims to discuss a new method of investigating unconscious perception. The main aim is to analyze the experimental verification of the capability of modifying existing topical preferences utilizing individually organized unconscious information impact. The idea of the experiment was to change the targeted level in subjects' relevant emotional appeal towards its increase to the previously unattractive object. **Methods:** To meet that aim, a study was carried out involving 60 students from different faculties of Petrozavodsk State University (PSU), 30 girls and 30 boys aged 19 to 23 years. For mathematical processing of results to determine the significance of differences, the Mann-Whitney test, and  $\chi^2$ . **Results:** The results of the second computer procedure of the female sample decided at twenty-six women, constituting 86.6% of the group, with significant differences increasing the response to one of four portraits.

**Conclusion:** Women are more prone to changes in actual emotional preferences than men. However, this trend was not statistically validated.

**Keywords:** unconscious perception, emotional appeal, unconscious information, topical preferences.

### Resumen

**Introducción:** el presente estudio tiene como objetivo discutir un nuevo método de investigación de la percepción inconsciente. El objetivo principal es analizar la verificación experimental de la capacidad de modificar las preferencias tópicas existentes utilizando el impacto de la información inconsciente organizada individualmente. La idea del experimento era cambiar el nivel objetivo en el atractivo emocional relevante de los sujetos hacia su aumento al objeto previamente poco atractivo. **Métodos:** Para cumplir con ese objetivo, se llevó a cabo un estudio que involucró a 60 estudiantes de diferentes facultades de la Universidad Estatal de Petrozavodsk (PSU), 30 niñas y 30 niños de 19 a 23 años. Para el procesamiento matemático de los resultados para determinar la importancia de las diferencias, la prueba de Mann-Whitney y  $\chi^2$ . **Resultados:** Los resultados de los procedimientos informáticos de la segunda muestra femenina determinaron veintiséis mujeres, constituyendo el 86,6% del grupo, existiendo diferencias significativas entretanto aumentando la respuesta a uno de los cuatro retratos. **Conclusión:** percepción inconsciente, atractivo emocional, información inconsciente, preferencias tópicas.

**Palabras clave:** procesos de percepción y memoria, forma preconsciente de percepción, algoritmo informático, estado emocional.

526

### Introduction

Experience is the primary source of knowledge that provides knowledge material. At the same time, what is experienced through the senses belongs to external experience<sup>1-3</sup>. What is not determined by the senses, for example, desire, feeling, and human reflections, are traditionally referred to as an internal experience<sup>4,5</sup>.

In this interpretation, emotional phenomena as phenomena of the psyche are, in essence, internal experiences. Thus, there is reason to believe that it is in this sense that most researchers use the concept of "emotional experience", which explains the lack of its definition in modern Russian psychology<sup>6</sup>.

It becomes evident that emotional experience is a set of emotional experiences, on the one hand, represented in the consciousness of an individual subject and is experienced by him. On the other hand, it is the property of all humanity and is transmitted and formed in mastering the language of emotions in ontogenesis<sup>7-9</sup>.

Further, the Great Soviet Encyclopedia defines “experience” through the category of “sensory-empirical cognition of reality”, as the unity of knowledge, skills, and abilities<sup>10,11</sup>.

This interpretation is correlated with how the concept of “experience” is presented in the history of philosophy, primarily in the views of representatives of the materialist<sup>10-15</sup>. It is known that the adherents of idealistic empiricism limited experience to the totality of sensations and perceptions, denying that it was based on objective reality, and recognized subjective experience as the only reality<sup>3,5,8,9</sup>.

Materialistic empiricism proceeded from the fact that the source of experience is the material world. In contrast to empiricism, representatives of rationalism<sup>7,16,17</sup> believed that logical thinking could not be based on experience since he gives vague knowledge, leading to delusions, and they thought that the mind could comprehend the truth directly, bypassing the sensory-empirical level of knowledge<sup>12,13</sup>.

Dialectical materialism viewed the experience as a derivative of objective reality<sup>3,13</sup>. Experience is a process of active, transformative influence of a person on the outside world, and at the same time, the result of this influence is in the form of knowledge and skills. The concept of experience essentially coincides with the categories of experiment and observation. On their basis, experience is formed as a result of cognition, including the totality of historically established knowledge<sup>1,14</sup>.

Thus, in the history of philosophy, discussions around the concept of “experience” were reduced to the approval or refutation of the idea of the subjectivity of experience and the analysis of the interaction problem between the subject and the object in the process of cognition of reality<sup>6-9,18,19</sup>.

Experience is also considered a set of ideas and thought patterns inherent in everyday consciousness, which contradicts scientific knowledge. In this regard, “everyday experience” is consistently used. Thus, either the subject becomes the bearer of several types of experience, or scientific knowledge is not a form of his experience but exists by itself, according to E. Yu. Savin<sup>6</sup>, it should be borne in mind that even every day, spontaneously formed experience still contains some generalized ways of explaining empirically observed phenomena.

The second approach to considering the concept of “experience” is associated with studying professional experience in the concept of practical thinking. Experience is viewed as the basis of practical thinking, characterized as the unity of verbalized and non-verbalized knowledge. The primary role is assigned to the metacognitive components of experience, which can act as stereotypes of professional activity.

And finally, the category of experience is considered in the concept of mental experience by M.A. Kholodnaya<sup>7</sup> as the

basis of intelligence. Three levels represent mental experience: cognitive experience, which includes structures that are responsible for processing information (ways of coding information, cognitive schemes, semantic structures, and conceptual mental structures); metacognitive level, which includes mental formations that allow for voluntary and involuntary regulation of one’s intellectual activity; intentional experience, which provides for mental structures that underlie individual intellectual tendencies (in the form of preferences, beliefs, attitudes).

Thus, emotional experience is an integral mental education accessible to reflection in actual time. Still, its content also includes weakly reflexive or unconscious forms of organizing knowledge about emotional phenomena, a system of implicit ideas about them. The content of emotional experience can be attributed to both the past and the future.

Following the concepts of the mental experience of M.A. Kholodnaya, the subjective experience of I.S. Yakimanskaya, and referring to the results of a pilot study of psychology students’ ideas about the emotional experience<sup>8</sup>, we summarize that the content of emotional experience includes:

1. Emotional phenomena of various modalities experienced and reflected by the subject in actual time (an operational form of the existence of emotional experience).
2. Emotional memory is the basis for constructing implicit theories of emotions (a fixed form of the existence of emotional experience).
3. Implicit theories of emotions as mechanisms for processing emotional experience (a fixed form of the existence of emotional experience).
4. Attitudes and stereotypes as mechanisms of cognition of emotional experience (a fixed form of the existence of emotional experience).
5. Images and concepts (forms of reflection of emotional experience).
6. Methods of verbal and non-verbal expression of emotional experience.
7. Generalized ways of explaining (interpreting) emotional experience.
8. Stereoscopic and stereoscopic types of cognition of emotional phenomena<sup>9</sup>.
9. Skills of managing emotions and feelings in oneself and the Other (fixed and potential forms of existence of emotional experience).

Emotional phenomena in modern psychology are mainly studied as separate manifestations of the vibrant world of a person. At the same time, in a person’s consciousness, they appear to him as a subjectively experienced reality, as his emotional experience.

The purpose of this study was experimental verification of the ability to modify existing topical preferences using individually organized unconscious information impact.

The idea of the experiment was to change the targeted level in subjects' relevant emotional appeal towards its increase to the previously unattractive object. Current emotional appeal - no appeal we define as a spontaneous ranking entity not previously known and not having personal relationships of objects in order of preference. In this study, the unexpected emotional appeal of objects was identical in format photographs portraits of girls and boys of Slavic appearance taken from the Internet.

In the first stage, test-imposed ten photos of girls and portraits of young men, respectively, the test-boys - ten portraits of girls with instruction expand charges against pictures in the order appeal.

The second phase was conducted after ten days for the second phase of the unused hardware-software complex MindReader, created by the Moscow Research Institute PSY-TECH under the direction of I.V. Smirnov<sup>3</sup>.

Based on the results of the first stage, for each subject was preparing its computer procedure, the most unappealing portrait of the last-placed tenth in the first stage was built on the video images' sexually erotic nature. Throughout the procedure, which lasted 12 minutes, each subject was presented with 32 pictures of a sexually erotic nature, each of which is shared by the presentation of photos that are rejected at the first stage of the portrait.

Backward masking presents this video series in the subject's unconscious mode. Masking images, both for erotic photos and portraits, used for special patterns that match the original pictures' colors generates the program itself to realize its algorithm.

Thus, before the test patterns on the screen flashed, he deliberately did not accept the content of the video in disguise, although at an unconscious level, sees and treated all the requirements of the image. They were changing images - patterns and masked images, carried by the subjects pressing a button. Should press the button during the 150 -300 msec with the appearance of each subsequent image in the case of advance or retard the program served error signals. Thereby maintaining voluntary attention and operational voltage throughout the entire procedure.

Subjects consented to participate in the experiment voluntarily and the shape of its holding, according to which they had not reported the true content of the experiment before it was complete. The main objective of this test phase for the operator acted to specifically task tracking accuracy and inerrancy timeslot switching patterns flashing on the screen.

Guide the subject read as follows:

"Your job as quickly as possible to press the button each time there is a pattern. If you are late with a push on the CRT dis-

plays remark "late" if ahead of the game - a remark "early." All these messages are duplicated in a loud voice in the headphones. The procedure ends with a voice message: "The procedure is complete."

This procedure aims to develop a positive association between the portrait and the emotions caused by the unconscious perception of sexy pictures - erotic nature.

Originally based on a preliminary acquaintance with the subjects assumed that the first sexually erotic sphere was positively significant for the majority of participants in the experiment. Secondly, the perception of such information may cause a physiological reaction. And thirdly, unconscious perception takes action moral-normative factors associated with education, that is shyness, and taboo that may occur when viewing sexually erotic images in the social situation of the experiment. It could be assumed that the condition caused by unconscious visual perception of sexually erotic stimulation is emotionally positive and consequently affects the attractiveness level of the object, which was seen in this context.

Immediately after this procedure, with each test performed, pre-arranged individual repeats the procedure. The subject is presented in an unconscious mode, with four portraits of ten presented in the first stage.

First portrait - previously the most attractive; second-most unattractive in the first stage, used in the previous procedure, and two neutral. The procedure is similar to the previous one, held in the unconscious mode, only used as incentives for four portraits without any additional video production. Each portrait is presented in turn ninety times. The purpose of this procedure: identify the unconscious significance of each of the four requirements objects and thereby check whether there was an unconscious attraction to change a previously unattractive portrait.

Significance of objects is determined by the total time of the hierarchy of simple senso-motor reactions to each of four portraits of stimuli, from the moment of unconscious perception portrait - a stimulus to the moment you press the button, which is calculated programmatically and compared with each other by Mann-Whitney criterion. It was expected that the reaction time for significant and non-significant incentives would be significantly different. In the case of a positive attitude, the subject's reaction time for his perception will increase, and the negative will decrease.

After 10 days, held the third stage, which was completely similar to the first. Each subject had the same portraits at the first stage, requesting to arrange them according to the degree of attraction for comparison of two conscientious committed layouts for the presence-absence of changes in emotional preferences objects on a conscious level.

The study involved 60 students from different faculties of Petrozavodsk State University (PSU), 30 girls and 30 boys aged 19 to 23 years. For mathematical processing of results to determine the significance of differences, the Mann-Whitney test, and  $\chi^2$ .

Modern psychology is characterized by a departure from modernist paradigms and classical and non-classical rationality, freed from natural science methodology. The “objective” psychology that prevailed for almost a century and a half is being replaced by the psychology of the constructivist version, where researchers can put forward provisions of a “freer” character, taking into account the specifics of the psyche and the approach to its study<sup>12</sup>.

Unconscious mechanisms for processing information and carrying out mental activity are much more effective because unconscious thought processes can process more information and produce its all-encompassing integration, which leads to a deep understanding of the problem and non-standard options for solving the problem. An unconscious thought theory defends the primacy of the unconscious over the conscious in cognition.

The factors contributing to the problem’s productive and creative unconscious solution in the latency period are relaxation, surrounding objects and images, prompting the task, forgetting, or displacing some attitudes that interfere with the original idea<sup>13</sup>.

Sexuality as a phenomenon is currently being widely studied by both fundamental and industrial science. Sexuality as a phenomenon has long gone out of sight of only one science and has penetrated various spheres: culture, art, medicine, philosophy, sociology, psychology, and gender. Sexuality, which is a genetically determined biological need, which is initially a sexual attraction, is the result of an integrated interaction of biological, psychological and, social, cultural in the individual experience of a person, one of the most significant phenomena of human existence, and an essential human experience in the aggregate.

Sexuality, being a multidimensional problem that manifests itself on three levels biological, social, and psychological, affects all levels of human existence. In the analysis of sexuality from the point of view of biology, the following two instinctive theories have long dominated:

According to the first theory, there is an accumulation of stimulus, according to which sexuality is fed by constantly and spontaneously accumulating internal anxiety based on an unmet physiological need that requires periodic satisfaction, like hunger or thirst<sup>5,12</sup>. The second - the theory of stimulus reduction, assumes the satisfaction of sexual desire according to the scenario of discharge or extinction of tension and the establishment of balance in the body and is comparable to the mechanism of homeostasis. Accumulating tension and swaying of the system, after which discharge occurs, and the system restores the usual status quo, the constancy of the environment<sup>7,18</sup>. These two theories are reductionist and do not consider the psychological and social factors in the problem of sexuality.

Continuing the biological tradition in the concept of sexuality, the terms of sexual desire were introduced; arousal - a

current, temporary psychophysiological state, is, according to R. Whalen, the function of stable excitability of a subject in a context determined by specific internal and external situations. In this case, the sexual or sexual attraction has multi-dimensionality and variability in its origin at the physiological level - the hormonal composition of the blood in a quantitative ratio; on the psychological level, these are emotional, behavioral, and communicative conditions of manifestation in acceptable conditions and situations<sup>10</sup>.

The sexual instinct, like all human instincts, has a natural innate basis and is embedded in human life at the genetic level. A lot depends on how it is realized in a person, manifesting itself throughout life. In terms that say that the instinct is “blind”, “natural”, “hereditary”, “impulsive,” there is a reference that the emergence, maturation, and functioning of this instinct occurs apart from the will and consciousness of man. The sexual instinct is associated with such concepts as sexual desire (libido), sexual, erotic development, and so on, but how much cultural development is connected with it remains not clear enough for us to argue that this is the key to educating adolescents and young men from the point of view of educational psychology. The maturation of the instinct in the psyche, as a system within, has its characteristics that determine its nature. Being hereditary, natural sex instinct has a huge potential for energy<sup>11</sup>.

Currently, components of sexuality in the literature are considered: cognitive, emotional, behavioral, and spiritual. Much attention is paid to the biological determination of sexuality.

Cognitive processing is manifested in the form of a change in the perception and awareness of information related to sexuality, in a change in ideas about oneself and the world around us in the context of sexuality, in a change in the direction of thinking. The cognitive component of sexuality includes knowledge of sexuality, gender identity, psychological gender, beliefs concerning human nature in general, and beliefs about oneself and one’s sexuality.

The cognitive component is closely related to emotion. The emotional sphere serves as one of the main mechanisms of internal regulation of mental activity.

The emotional sphere serves as one of the main mechanisms of internal regulation of mental activity. The emotional component of sexuality includes several emotions, including love, guilt, anxiety, etc.

The peculiarity of the bodily component consists in the bodily-sensual material basis of corporeality. In this context, the bodily component includes corporeality as “reality” (body, bodily being, sensations, physical contact).

The behavioral component is expressed in the communicative ability to build relationships with the opposite sex, establish contacts, and openly express their belonging to the same sex. The behavioral component includes sex-role behavior, contacts, and close relationships within a couple.

The existential component of sexuality is associated with the subject’s understanding of himself in real situations of human



existence. It includes the search for the meaning of life, freedom, and loneliness. The functions of sexuality are: reproductive, regulatory, health-preserving, adaptive, behavioral, recreational, and relational<sup>1,4</sup>.

Now, the existence of the unconscious (subliminal, sub sensory, subliminal) perception recognizes as undisputed. It is known to produce conditioned reflexes to unconscious stimuli that using unconscious stimulation may affect the person's emotional state. There was also the emergence of psychophysiological responses to heat-cold sensation and sexual arousal in response to specially organized by the unknown information<sup>1,4</sup>.

However debatable about the possibility of purposeful influence on complex behavioral programs caused the need-motivational and value - meaning areas of personality. As conditions of the such task are embedded personal importance of the information, emotional arousal, high level of activation of the psyche, the intensity and time of exposure, as well as ongoing compliance impact individual psychosomatic organization man<sup>1,2,4</sup>.

Second computer procedures female sample was determined at twenty-six women, constituting 86.6% of the group, significant differences in the meantime increasing the response to one of four portraits. It is, in all cases, the portrait that was built in a sexually - erotic video series, i.e., most unattractive in the first stage. The results of the third stage showed that the re-conscious layout for the attractiveness of girls fourteen of twenty-six, that is 46.6% of the female sample, previously suffered most unattractive portrait from tenth place on the first three positions: eight girls put it to the first position, the second five one third.

Twelve girls, i.e., 40% of the female sample left the most unattractive portrait at the former, the latter tenth place. Four girls, 13.4%, showed no change in the emotional appeal on a conscious level, but with the second computer is no set procedure, they reliable preferences of any portrait in front of others; that is, their conscious preference is not confirmed unconscious perception as previously attractive and not attractive portraits.

In the group of young people results from a second computer procedure, 19 people, constituting 63.4% male sample, established significant differences in the increase in the average response time to portrait, which was built in sexy - erotic video series about the three others, that is the most unattractive in the first stage. The results of the third stage showed the re-conscious layout of the attractiveness of the nineteen-five people, i.e., 16.6%. The male portrait sample moved from the tenth place at the beginning of the series. Three people put the unattractive portrait of the first stage in the first place, one second, one-third. Fourteen of the nineteen young men, i.e., 46.6% of the male sample, left the most unattractive portrait at tenth place. Eleven young men, i.e., 36.6%, showed no change in emotional appeal, both unconscious and conscious. The second procedure is a computer, as well as in women's group did not establish reliable, they preferences or any other front portrait.

The mathematical treatment of  $\chi^2$  by the first and third phases of the two groups established the reliability of the differences at the five percent significance level.

## Conclusion

Significant differences between groups in the results of changing the initial emotional preferences as a whole were not found.

Thus, this study suggests the following conclusions:

1. There is a real opportunity to change emotional preferences using the unconscious presentation of information in a specially organized, individualized single computer procedure.
2. Women are more prone to changes in actual emotional preferences than men, although this trend was not statistically validated.

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