Культурно-историческая психология
2024. Т. 20. № 3. С. 36—44
DOI: https://doi.org/10.17759/chp.2024200304
ISSN: 1816-5435 (печатный)
ISSN: 2224-8935 (online)

Cultural-Historical Psychology
2024. Vol. 20, no. 3, pp. 36—44
DOI: https://doi.org/10.17759/chp.2024200304
ISSN: 1816-5435 (print)
ISSN: 2224-8935 (online)

CONCEPTUAL FRAMEWORK
ОСНОВНЫЕ ПОНЯТИЯ

The Concept of Ingrowing in the Theory of Development of Higher Psychological Functions

Andrey D. Maidansky
Belgorod National Research University, Belgorod, Russia;
Moscow State University of Psychology and Education (MSUPE), Moscow, Russia
ORCID: https://orcid.org/0000-0003-2061-3878, e-mail: caute@yandex.ru

The author examines the concept of ingrowing in Lev Vygotsky's cultural-historical psychology. The theoretical significance of his metaphors of ingrowing and gardening, and the connection between the terms "ingrowing" and "interiorisation" are revealed. The plain criterion for evaluating the success of ingrowing higher psychological functions is found in the development of verbal thinking. By analysing the concepts of interpsychic and intrapsychic function, the author shows how Vygotsky understands the process of transformation of one function into another: (i) types of ingrowing and (ii) the nature of changes in the structure of higher psychological functions during the transition of interpsychic forms of behaviour into the child's consciousness. The controversy between Vygotsky and Aleksei Leontiev on the ingrowing of word meanings is discussed. Special attention is paid to the ingrowing scientific concepts at school age. The epilogue briefly outlines the fate of the concepts of ingrowing and interiorisation in Russian cultural-historical psychology.

Keywords: ingrowing, interiorisation, higher psychological function, sign and meaning, verbal thinking, scientific concept, spontaneous concept, learning and development.

Acknowledgements. My sincere thanks to Ekaterina Zavershneva for the fruitful discussion of this article in manuscript.

For citation: Maidansky A.D. The Concept of Ingrowing in the Theory of Development of Higher Psychological Functions. *Kul'turno-istoricheskaya psikhologiya = Cultural-Historical Psychology,* 2024. Vol. 20, no. 3, pp. 36—44. DOI: https://doi.org/10.17759/chp.2024200304

Понятие вращивания в теории развития высших психологических функций

А.Д. Майданский
Белгородский государственный национальный исследовательский университет (ФГАОУ ВПО НИУ «БелГУ»), г. Белгород; Московский государственный психолого-педагогический университет (ФГБОУ ВО МГППУ), г. Москва, Российская Федерация
ORCID: https://orcid.org/0000-0003-2061-3878, e-mail: caute@yandex.ru

В статье обсуждается понятие вращивания в культурно-исторической психологии Л.С. Выготского. Выясняется теоретический смысл метафор вращивания и сада, связь терминов «вращивание» и «интериоризация». Ближайший критерий оценки успешности вращивания высших психологических функций усматривается в развитии речевого мышления. Анализируя понятия интерпсихической и интрапсихической функции, автор показывает, как у Л.С. Выготского понимается процесс трансформации одних функций в другие: типы вращивания и характер изменения структуры высших психологических функций при переходе интерпсихических форм поведения внутрь сознания ребенка. Обсуждается полемика Л.С. Выготского и А.Н. Леонтьева о «внутреннем вращивании» значений слов. Особое внимание в статье уделяется вращиванию научных понятий в школьном возрасте. В эпилоге кратко обрисовывается судьба понятий вращивания и интериоризации в отечественной психологии.

Ключевые слова: вращивание, интериоризация, высшая психологическая функция, знак и значение, речевое мышление, научное понятие, спонтанное понятие, обучение и развитие.

Благодарности. Автор благодарит Е.Ю. Завершневу за плодотворное обсуждение рукописи этой статьи.

Для цитаты: *Майданский А.Д.* Понятие вращивания в теории развития высших психологических функций // Культурно-историческая психология. 2024. Том 20. № 3. С. 36—44. DOI: https://doi.org/10.17759/chp.2024200304

I

The term "ingrowing" (*vrashchivanie*) appeared in Vygotsky's article "The Problem of Cultural Development of the Child" (1928), when he first presented his theory of the development of higher psychological functions. "Ingrowing" refers to the last of the four stages or phases of the cultural development of each of these functions and to the "psychogenesis of cultural forms of behaviour" in general. At this stage, the methods of the child's external activity "as if ingrow and become internal" [10, p. 70].

For example, children, like the monkeys in Wolfgang K hler's experiments, initially perform operations using tools in a natural "visual field". Very soon they learn to solve them "interpsychically", by social means — with the help of gestures and speech, in cooperation with adults. And finally, ingrowing allows them to perform instrumental (and any sign) operations independently, in the internal "semantic field" of consciousness.

In the process of the child's cultural development, ingrowing is preceded by the stages of (i) "primitive psychology", (ii) "naive psychology", and (iii) "external cultural method". For our purposes it is not necessary to consider the whole cycle of psychogenesis. Suffice it to note that for Vygotsky ingrowing is the final phase of the cultural development of the child's psyche, as well as of any psychological function considered in itself.

In the course of his experiments, Vygotsky discovers several types of ingrowing, among which he identifies three "principal" types.

The first type, *"ingrowth of the entire stimulus"*, is illustrated by remembering a picture associated with its verbal name. The memory image then replaces the physical picture. This method is commonly used by young children to learn the alphabet, and it also works successfully for adults learning foreign languages.

In the second method, called *"ingrowing of the seam type"*, the external stimulus, on the contrary, is removed from the operation once it has completed its transition inward. The operation is then performed automatically, without the aid of auxiliary signs. An illustration of this is the "complex choice reaction" as described by Alfred Lehmann (the author of the three-volume *Psychodynamics*). The transition from counting on the fingers to counting in the mind, when the child no longer needs the fingers, can serve as another example. It looks like a return to the initial, natural stage: in appearance the operation becomes immediate again.

The third and most valuable type is the *assimilation of the very structure* of an external operation [10, p. 71]. In this case, an "internal scheme" is formed, in which various memory images, representations and knowledge take the place of the external stimulus, making it possible not only to act according to the same scheme in all situations of the similar type, but also to *develop the operation itself* by improving the internal "stimuli-means".

In this way, the experimental study of ingrowing memory functions led Vygotsky to conclude that "the ingrowing of the structural type occurs at this point when the method itself, the operation itself, is developing, and the prolifically developed internal experience constitutes a ready and varied system of so-called representations, or trace stimuli, that may be used as signs" [3, p. 250].

The three types of ingrowing are discussed in more detail in Chapter Five of *The History of the Development of Higher Mental Functions*. Around the same time, Vygotsky begins to study the formation of internal speech, which is addressed to oneself, silent and abbreviated. It is formed by ingrowing external, social speech, or "speech for others". The paths of thought and speech crossed in the previous, third stage of cultural development, but it is only in the course of ingrowing that *synthesis* takes place and a new higher psychological function — verbal thinking — emerges. The process of the ingrowth of thinking through the word in the child's consciousness is traced by Vygotsky in his studies of egocentric speech. It is on the basis of inner speech that an individual inner world is formed in adolescence.

II

There can be no doubt that when Vygotsky spoke of "ingrowing", he had "interiorisation" in mind. He himself links the two terms directly: "We call this withdrawal of the operation inwards, this interiorisation of higher mental functions, connected with new changes in their structure, the processes of ingrowing" [8, p. 71].

Ingrowing, then, is a *specific kind* of interiorisation. It is characterised by a *change in the structure* of higher psychological functions due to their withdrawal inwards: from the field of joint activity, collaboration — to the field of individual consciousness. The methods and sign

means of the child's "social collective activity" grow into his psyche, and the "interpsychic" functions turn into "intrapsychic" ones, as required by the "general genetic law of cultural development".

The interpsychic function is externally divided between two or more subjects and is carried out by them jointly, in cooperation.

The intrapsychic function is performed by only one subject, in the field of his individual consciousness, but the subject himself is bifurcated: he enters into a silent dialogue with the "other(s)" within himself or commands himself on behalf of the "other" (will).

The nature of both functions is social, but if in the first case the social character of the function is out in the open, in the second case it is hidden inside consciousness: the collective appears here in the form of its opposite — the individual. It is the *individualisation* of higher psychological functions that is "the main road of child development", as Vygotsky argues in his polemic with Jean Piaget [7, p. 282]. A similar process of individualisation of the higher psyche, on the basis of "inner sociality", takes place in phylogenesis.

The most obvious indicator of psychological development is the degree of individualisation of verbal thought, especially written speech[1]. It shows how deeply thinking and speaking have *grown inside* human consciousness, how freely a person has managed to master these functions, to subordinate them to his or her own will. For the gardener of children's souls, the teacher, this is the closest criterion for judging the *success of ingrowing* psychological functions.

It should be added that in the infant individual psychic activity (with all its perceptual actions and sensorimotor schemes) is always one of the sides of interpsychic activity. Vygotsky described the consciousness of the infant with the German term *Ur-wir*, "primal we". Along with affective impulses and external stimuli, the consciousness and will of the *people around* the infant plus various *cultural objects* invisibly participate in the actions of infant consciousness.

Interpsychic sociality is often overlooked, even by eminent researchers such as Piaget. Scientists project the 'autism' of *their theories* onto children's mind. Cutting a child's thinking out of the social fabric can only be done artificially, with the razor of abstraction. As a result, the possibility of understanding the *course of psychological development* is lost — for the simple reason that its course (including perceptual and sensorimotor development) in the infant is organised and corrected at every turn by other people with their higher psychological functions.

How exactly the structure of higher psychological functions changes during the transition of interpsychic forms of behaviour inwards is described in the work *Tool and Sign* (written not earlier than 1930). Experimentally, Vygotsky discovers three typological moments of transformation of children's psyche: "1) the substitution of functions, 2) the alteration of natural functions (or of the elementary processes forming a basis for the higher function and constituting a part of it) and 3) the appearance of new psychological functional systems (or systemic functions), which assume the role in the general structure of behaviour that was previously performed by particular functions" [8, p. 15].

These three points are illustrated by examples of the changes that occur with ingrowing higher (mediated by cultural signs) memory functions. Referring to Aleksei Leontiev's experiments and the "parallelogram of the development", Vygotsky shows the mechanics and dynamics of the formation of "a new intrapsychological layer, of the birth of a new psychological system, incomparably higher in composition and cultural-psychological in genesis" [8, p. 73].

There is a simplification, a sharp decrease in the level of social forms of behaviour at the beginning of their ingrowing and transformation into intrapsychic operations. This is not surprising, since direct cooperation with the adult has ceased, and the adult's internal 'double' has not yet had time to develop. Moreover, the psychological system into which the new functions are incorporated is still quite primitive; its structure and operating principles are much simpler than those of the cultural environment from which these higher functions came. This is why, for example, the child's egocentric speech is poorer and lower in comparison with his social speech (but *thinking*, supported by egocentric speech, rises to a new level).

Many interpsychic functions never go completely inward, they get stuck halfway through their development, remaining in the captivity of visual perception and external action. The decisive role in freeing them from this captivity and in the "emancipation of the individual sphere" belongs to the *word*, Vygotsky argues. Speech is inherently analytical, perception holistic. When the word enters the visual field, it destroys the immediate integrity of the structures of perception and action and "deforms impressions" [8, p. 17]. In aphasics, full-fledged ingrowing of higher functions is impossible..

III

"Ingrowing" is a metaphor based on the analogy between the development of cultivated plants and higher psychological functions. The Russian word *vrashchivanie* implies an *artificial, purposeful* human influence

[1] "Written speech is the *algebra* of speech and the most difficult form of complex volitional activity" [2017, p. 357].

on plant organics and natural growth processes. It is not an evolutionary metamorphosis of flowers or trees, but a grafting of cultural means and activity patterns (scion) onto the natural psyche of the child (stock), just as a gardener or scientist-breeder does.

A special study of the 'plant' analogy is made in a recent article by Michael Cole and Natalia Gajdamaschko, "Re-visiting Vygotsky's concept of *vrashchivanie* (ingrowing): A focus on metaphors" [21]. Drawing on "the millennia's-old practice of thinking of development in terms of gardens", the authors comment wittily on Vygotsky's famous arguments about the role of the gardener and teacher in a "true developmental diagnosis".

Vygotsky liked to explain his concept of *zone of proximal development* using the example of a gardener's work. When diagnosing the state of a garden, it is necessary to determine the prospects for its development, taking into account not only the mature trees but also those that have just begun to grow. In the same way, the psychologist should act in the kindergarten and the school, where he first ingrows and then cultivates 'seedlings' of higher psychological functions.

As we can see, garden metaphors accompany the key concepts of Vygotsky's theory. Following his line of thought, Cole and Gajdamaschko reflect on the social determinants (as "equivalents of fertilizer") of a child's development. They interpret this development as a "historically conditioned biological process", in Vygotsky's terms.

It should be clarified, however, that the passage quoted by the authors refers to *organic development* and not to the development of higher psychological functions: "Since organic development takes place in a cultural environment, so it becomes a historically conditioned biological process" [3, p. 22]. Vygotsky never said anything similar about the *development of the higher psyche*. This is one hundred per cent historical and specifically cultural process, not in any way organic. The lower — biological, chemical and physical — processes form its material preconditions, nothing more. Some of these preconditions are absolutely necessary (for example, the normal functioning of the nervous system, speech and thinking in their "natural forms"), others contribute to the development of certain higher functions, others more often interfere with them, and others are indifferent.

This is all the more true of the highest stage of psychological development, the ingrowing process. "The fourth stage is the environment in us, *culture that has been absorbed*, language that has become thinking, *history within psychology*." [2, p. 157; italics ours]. Ingrowing is a purely cultural, socio-historical process of individual mastery of the means and techniques of "social collective activity". Although, of course, such absorption of culture is impossible without a whole series of natural conditions that develop as the body's organics (brain, musculoskeletal apparatus and all the rest) mature.

The dialectic of "the fusion of two developmental plans — natural and cultural", which Vygotsky writes about, characterises, in his own words, "the ingrowth of a normal child into civilisation" [3, pp. 32—32]. This raises the question of how do these two processes — the ingrowing (*vrashchivanie*) of cultural forms of activity and the ingrowth (*vrastanie*) of the child himself into the social environment — are related.

The formation of higher psychological functions (including the ingrowing phase) is a *cultural-historical component* of the process of the "ingrowth into civilisation". This very component — just one, but the *highest* plan of development — becomes the subject of study in Vygotsky's cultural-historical psychology. In those days, "organic development in a cultural environment" was the subject of another science, pedology (in which Vygotsky also did a great deal of work).

While stating the indisputable fact of merging, of the "convergence of natural and cultural lines in the development of a normal child", in no case should we forget about their *genetic difference*. We have before us not equal lines, but *lower and higher* "developmental plans". This difference determines the nature of the fusion processes, and Vygotsky sees it as the cornerstone of cultural-historical *pedagogy*.

"Differentiating the two plans of development in behaviour — the natural and the cultural — is the point of departure for the new theory of upbringing. The second point is even more important, more essential. It introduces the dialectical approach to child development into the problem of upbringing" [3, p. 294].

The second point is even more important and essential already because the modes of behaviour and psychological functions historically developed by human beings are higher, while all those given to us by nature are lower. If we forget for even a moment about the genetic difference between lower and higher functions or regard them as equal sides of development, the *dialectic* of the cultural and the organic immediately turns into a banal 'biosocial' *dualism*. And no correct phrases about the mutual penetration and dialectical interrelation of culture and nature can save us from this dualism...

What exactly is the "dialectical approach to development" that Vygotsky writes about? In dialectics, development from the lowest to the highest is characterised by the category of "sublation" (*Aufhebung*). Understood dialectically, not dualistically, the fusion of the natural and the cultural is precisely the sublation of the former by the latter. And the ingrowing of cultural forms of behaviour into the organics and 'elementary' psyche of the child is nothing other than the *sublation of the natural into the cultural*. The same happens, incidentally, in the process of breeding garden varieties of plants.

Vygotsky explains the meaning of the German verb *aufheben* (to preserve / to bury) in relation to the development of a mentally retarded child. "When it is said

'to bury' about an organic regularity, it does not mean that it has ceased to exist, but has the meaning that it is somewhere preserved, that it exists somewhere in the background..." [5, p. 118]. For Vygotsky, *cultural* regularity is always and everywhere in the foreground.

IV

Over the years, the term "ingrowing" appears less and less frequently in Vygotsky's works and notebooks. In the transcripts of the Leningrad lectures on psychology (1932) and pedology (1933—1934), the term is completely absent. In *Thinking and Speech* (1934) it appears only once in Chapter IV, "Genetic Roots of Thinking and Speech", which is an abridged version of his 1929 article [1].

However, it would be premature to draw far-reaching conclusions from this fact. In Chapter XI of *Pedology of the Adolescent* (1931) we find a new study of ingrowing, with a discussion of Leontiev's experiments on "the development of mediated attention at different ages" (including adults). Vygotsky first spoke here of the *law of ingrowing*[2].

"The initial stage in the development of any higher function is the stage of external operation accomplished through external means. Then, gradually, this operation is so mastered by the child, so firmly incorporated into the circle of the basic operations of his behaviour, so grown into the general structure of his thought, that it necessarily loses its external character, passes from the outside to the inside, and begins to be carried out chiefly by internal means. This process of transition of the operation from outside inward we call the law of ingrowing" [9, p. 375].

In an even later note on the back of a typographical card[3], Vygotsky distinguishes between *external and internal ingrowing* — of sign and meaning, respectively. Since there is no sign without meaning, we must assume that he is talking about *two phases* of ingrowing of the sign operation. Vygotsky may have reinterpreted his earlier typology in this way: ingrowth of the entire sign undoubtedly belongs to the external phase of the process, while the ingrowing of the seam type and the assimilation of the structure of an operation open the internal phase, since in both cases the meaning loses its direct dependence on the 'native' sign and begins an autonomous life.

The distinction between internal and external ingrowing is made by Vygotsky when discussing the topic of "the development of scientific and spontaneous concepts". The last part of his report of 12 October 1933 [see 19, p. 25], Chapter VI of *Thinking and Speech* and the experimental study of Josephina Shif [20], began in 1932 under Vygotsky's direction, are devoted to the same subject. The genesis of children's concepts was also studied by Aleksei Leontiev.

"*AN* [Leontiev]. The concepts mastered at school have their destiny... *The run inward*. The strength and weakness of the spontaneous and scientific concepts are *different*. Once the scientific concepts run their path downward, they become *spontaneous*[4]. *The problem* of internal ingrowing (of the *meaning*) analogous with the external ingrowing (of the *sign*)" [2, p. 414].

Vygotsky tries to convince Leontiev that it is time to move from the study of the ingrowing of *signs* into consciousness to a new, more complex problem — the metamorphosis of word *meanings* within consciousness (internal ingrowing). Leontiev, for his part, regards such a turn as "word-centrism of the system", fraught with the loss of "the actual relations of man to the world". He calls for "finding *in the way of life of a person* the key to his consciousness in order to connect life with consciousness" [19, p. 23—25, 38].

Vygotsky recognises the importance of this task, but it seems to him to be only the ground floor of the theory of consciousness. The connection between life and consciousness is two-sided: consciousness not only reflects and expresses life, but also *changes* it. The vital task of consciousness is to *transform the life* from which it is born: "The direct movement (from life to consciousness) is only important to the extent that it allows us to understand the *reverse movement* from consciousness to life (consciousness changes life), the dependency of life from consciousness" [2, p. 413—414].

Both the direct and reverse connection of life with consciousness are mediated by *cultural meanings* of things, actions, words. "Meaning changes consciousness, consciousness changes life. *The reverse movement from consciousness to life*. Spinoza" [2, p. 413]. The doctrine of how exactly consciousness changes life, Vygotsky called "height psychology".

What is life from the point of view of scientific psychology? Vygotsky found the answer to this question in Spinoza: to live is to act for the sake of self-preservation,

[2] Vygotsky liked to give students key theoretical statements (including those taken from other authors) in the form of "laws", and the laws varied from lecture to lecture. In the sixth chapter of Thinking and Speech we find the "law of the zone of proximal development", which was not mentioned in the lectures. In conjunction with a couple of other laws, Vygotsky contrasts it with the "law of shift, or displacement" in child development, which "Piaget had recently updated and thrown into the game as his last card" [1934, p. 335].

[3] This note was written at the earliest in 1933, most probably in October, after a fierce intellectual battle with Leontiev (Moscow, 12.10.1933).

[4] It is suggested to introduce a child into the world of science before school — through play: "Play is an irreplaceable way to cover the preschool part of speech and scientific development (to descend via play)" [2017, c. 529]. In play, scientific concepts are converted into the lower, everyday concepts. Such "descending" greatly facilitates the ingrowing of terms and methods of scientific thinking and, more importantly, creates a zone of proximal development for preschool thinking.

and psychic life is a *stream of affects* that arise in the process of such action and that in turn affect the body's capacity to act (*agendi potentia*). Man, the "thinking thing", is capable of consciously changing his life by controlling the stream of affects with the help of the concepts of intellect[5]. In short, this is "the power of the intellect or human freedom" (the title of the last, fifth part of the *Ethics*).

The ingrowing of higher forms of thinking — scientific methods and concepts — usually begins at school age. By studying science, the child acquires the tools to change life through consciousness. Moreover, the very process of ingrowing scientific concepts changes the interrelationship of psychological functions, the "order and connection of affects"[6] and his entire mindset. Hence the late Vygotsky's interest in the "destiny of concepts" in the development of verbal thinking and the child's psyche in general.

Scientific concepts usually ingrow not through object-oriented practical activity, in which "*things* process the child's mind" (Vygotsky), but through the *verbal* processing of the mind[7]. It begins with the assimilation of the *meaning* of a term. Vygotsky expects to solve the problem of the "internal ingrowing" of meanings by the method of "semic analysis", which he sees as "an analogue of the method of double stimulation" of the external ingrowing (of the sign).

The previous understanding of the ingrowing process is severely (self-)criticised. "We were engaged in the external analysis of the sign operation. We must take up the internal analysis of this function. The semic analysis is this internal analysis of sign use... Now we are interested in going inward, [into] the intra-atomic structure of the word, because *ingrowing cannot be understood from repetition* but *from* internal mediation. How did we understand it? As a representation of the word. This is wrong. In the psychological sense, meaning is the internal structure of the sign operation. The sign mediates through meaning. We have studied it in terms of behaviour, [now] it is necessary to study it in terms of consciousness" [2, p. 306].

Internal mediation as a "path from thought to word" (through meaning) is described in the seventh chapter of *Thinking and Speech*. In parallel, Vygotsky comprehends the reverse path — from word to thought (namely, scientific concept) — that school-age children take. The problem of internal ingrowing is intertwined here with the problem of the influence of teaching on development.

School education introduces the child into the world of scientific concepts through the meanings of words, terms, through the language of science. The ingrowing of meanings, "the run inward", opens up the possibility of developing scientific thinking, i.e. real mastery of scientific concepts. "When teaching according to the programme had ended, development began. When the child had mastered the meaning of the word at school, development just began" [2, p. 414].

By learning new meanings of words, scientific terminology, the way to mastering scientific concepts begins for the child. Semantic neoformations from the field of science not only enrich his language, but also change the whole structure of consciousness. The immersion of the child's thinking in scientific terminology, the ingrowing of its sophisticated and unfamiliar meanings into consciousness, requires considerable effort and triggers psychological functions and processes of a different order from those that take place in the world of everyday or spontaneous concepts. *Awareness* of one's own thinking arises and *mastery* of concepts begins through understanding the system of their logical connections.

"Scientific concepts with their completely different relation to the object, mediated through other concepts with their internal hierarchical system of relations among themselves, are the area in which the awareness of concepts, i.e. their generalisation and mastery of them, apparently arise first of all" [7, p. 194].

Thus, school education, by *teaching* the child to think in the system of scientific concepts, stimulates the *development* of thinking at its highest cultural level. The decisive role in this process is played by collaboration with the teacher — the imitation of the thinking operations that the latter has demonstrated in the process of "teaching according to the programme". The end of *teaching* turns into the beginning of *development* when the child starts to solve a problem *on his own* according to the pattern learned during teaching. In this case, the "moment of co-operation" with the teacher does not disappear, but only goes inside, grows in together with the concept, and is "invisibly present" in all subsequent operations of this type [7, p. 227].

Epilogue

Finally, let us say a few words about the fate of the concept of ingrowing after Vygotsky. As is generally believed, this concept was further developed in the 'activity' branch of cultural-historical psychology — only the term was changed: for some reason, the Russian *vrashchivanie* did not take root and was replaced by the foreign *interiorisation*.

Among Vygotsky's students, only Aleksei Leontiev seems to have used the term "ingrowing", and he soon

[5] The theatre teaches us how to do this. The director and actors consciously and purposefully play with the affects, their own and the audience's, artificially inducing the desired emotions. Vygotsky was, as is well known, a fervent theatre-goer.

[6] "To study the order and connection of affects is the principal task of scientific psychology", Vygotsky declares in his last theatre article [1936, c. 211].

[7] Hence the "verbalism" of scientific concepts, in which Vygotsky sees their weakness in comparison with spontaneous concepts.

parted with it, warning in his scientific autobiography that "ingrowing in *The Development of Memory* is interiorisation" [16, p. 38]. At the same time Leontiev accepts Piaget's definition: interiorisation is "a transition 'leading from the sensorimotor plan to thought'" [17, p. 75].

Compare this with Leontiev's interpretation of ingrowing from the time of his work with Vygotsky: "There occurs what we conventionally designate as the process of 'ingrowing' of an external means: an external sign turns into an internal sign. This is how the highest forms of human behaviour develop — mediated, *sign-based* behaviour" [18, p. 176]. Not much in common with Piaget's definition of interiorisation, is it?

Almost all psychologists, including critics of the concept of interiorisation such as Sergei Rubinstein, equate ingrowing and interiorisation.

With Vygotsky's departure, not only the term "ingrowing" but also the whole theory of "psychogenesis of cultural forms of behaviour" became history. Since then, only historians of science have remembered the typology of ingrowing and the three phases preceding it. There is nothing to say about fruitful research work in this system of coordinates. Activity psychology took into its arsenal the principle of "transition of higher psychological functions inward" (renaming the functions as "mental"), but almost all the specific content of the concept of ingrowing, obtained by Vygotsky's efforts, evaporated.

The work has not stopped, though. Activity theory of interiorisation has advanced beyond Vygotsky in at least two key points.

1. Piotr Galperin clarified the route along which *scientific concepts* make their "run inward" and developed a methodology for the formation of "mental actions with pre-established properties". (The further fate of concepts in children's consciousness and the development of the relationship between concepts and affects was not investigated by Galperin or anyone else. Semic processes — metamorphosis of verbal meanings in consciousness, internal ingrowing — also remained terra incognita.)

2. In the Zagorsk experiment with deaf-blind children, Aleksander Meshcheryakov and Evald Ilyenkov showed how *everyday concepts* and primary forms of cultural behaviour are internalised in the process of joint/shared object-oriented activity *(sovmestno-razdelennaya predmetnaya deyatel'nost')*. Vygotsky did not study this basic stage of cultural genesis (although he was familiar with the method of "initial humanisation" of deaf-blind children developed by Ivan Sokoliansky).

The main line of evolution of the concept of interiorisation was its expansion into the field of the lower psyche and sensorimotor actions. In Galperin, interiorisation is "the transformation of a non-psychic phenomenon into a psychic one", which also occurs in "wordless creatures" [12, p. 248]. Aleksander Zaporozhets extended the concept of interiorisation to perceptual processes that are not mediated by signs and proclaimed the "refusal to oppose natural and cultural functions" [13, p. 16].

Later, the very metamorphosis occurred with interiorisation, which Vygotsky caustically characterised: "When God created the world he said: let there be Gestalt — and there was Gestalt everywhere" [4, p. 307—308]. Similarly, the concept of interiorisation "dried up into a logical formula" and "turned into a metaphysical principle". Vygotsky's term "ingrowing" described only one, the final stage of development of higher psychological functions; "interiorisation" now describes almost any transformation of the external into the internal, of the objective into the mental.

Such a radical expansion of the scope of the concept of interiorisation brings it closer to the philosophical category of deobjectification (a calque of the German *Entgegenst ndlichung*). "It is the beautiful term — why [do we need] interiorisation?" asked Ilyenkov rhetorically [15, p. 259]. Indeed, there is no need for it, if the term has lost its concrete-scientific meaning.

At the end of the century, Vladimir Zinchenko shared the hope that with a correct understanding of objective-oriented activity, "the concept of interiorisation will become redundant in theoretical psychology" [14, p. 13].

For Vygotsky, ingrowing is not just the interiorisation of means and methods of collective activity, but it is also the subordination of natural impulses and affects to the *higher, cultural, rational* goals of social life, and the *technology of mastering oneself*, one's own psychological functions of perception and memory, thinking and speech. Perhaps this is why Vygotsky invented the garden metaphor of "ingrowing" to replace the impersonal abstraction "interiorisation"? Cultural-historical psychology is the science of man's transformation of the natural wilds of his psyche into a *garden* of higher psychological functions. Each of these functions people have to grow into themselves and cultivate.

References

1. Vygotsky L.S. Geneticheskie korni myshleniya i rechi [Genetic roots of thinking and speech]. *Estestvoznanie i marksizm* [Natural Sciences and Marxism], 1929, no. 1, pp. 106—133. (In Russ.).

2. Vygotsky L.S. *Zapisnye knizhki. Izbrannoe* [*Notebooks. A selection*]. Zavershneva E., van der Veer R. (eds.). Moscow: Kanon+ Publ., 2017. (In Russ.).

Литература

1. *Выготский Л.С.* Генетические корни мышления и речи // Естествознание и марксизм. 1929. № 1. С. 106—133.

2. *Выготский Л.С.* Записные книжки. Избранное / Под ред. Е. Завершневой и Р. ван дер Веера. М.: Канон+, 2017. 608 с.

3. *Выготский Л.С.* История развития высших психических функций // Собрание сочинений: в 6 т.

3. Vygotsky, L.S. *Istoriya razvitiya vysshikh psikhicheskikh funktsii* [*The history of the development of higher mental functions*]. In *Sobranie sochinenii* [*Collected Works*], 6 vols. Vol. 3. Problemy razvitiya psikhiki [Problems of mental development]. Moscow: Pedagogika Publ. 1984, pp. 5—328. (In Russ.).

4. Vygotsky L.S. Istoricheskii smysl psikhologicheskogo krizisa [Historical meaning of the crisis in psychology]. In *Sobranie sochinenii* [*Collected Works*], 6 vols. Vol. Voprosy teorii i istorii psikhologii [Questions of theory and history of psychology]. Moscow: Pedagogika Publ., 1982, pp. 291—436. (In Russ.).

5. Vygotsky L.S. K voprosu o kompensatornykh protsessakh v razvitii umstvenno otstalogo rebenka [The problem of compensatory processes in the development of the mentally retarded child]. In *Sobranie sochinenii* [*Collected Works*], 6 vols. Vol. 5. Osnovy defektologii [Fundamentals of defectology]. Moscow: Pedagogika Publ., 1983, pp. 115—136. (In Russ.).

6. Vygotsky L.S. K voprosu o psikhologii tvorchestva aktera [On the problem of the psychology of the actor's creative work]. In Yakobson P.M. *Psikhologiya stsenicheskikh chuvstv aktera* [*Psychology of stage feelings of the actor*]. Moscow: GIZ Publ., 1936, pp. 197—211. (In Russ.).

7. Vygotsky L.S. *Myshlenie i rech': Psikhologicheskie issledovaniya* [*Thinking and speech: psychological studies*]. Moscow, Leningrad: Sotsekgiz Publ., 1934. (In Russ.).

8. Vygotsky L.S. Orudie i znak v razvitii rebenka [Tool and sign in the development of the child]. In *Sobranie sochinenii* [*Collected Works*], 6 vols. Vol. 6. Nauchnoe nasledstvo [Scientific heritage]. Moscow: Pedagogika Publ., 1984, pp. 6—86. (In Russ.).

9. Vygotsky L.S. *Pedologiya podrostka* [*Pedology of the teenager*]. Moscow, Leningrad: Uchpedgiz Publ., 1931. (In Russ.).

10. Vygotsky L.S. Problema kul'turnogo razvitiya rebenka [The problem of cultural development of the child]. *Pedologiya* [*Pedology*], 1928, no. 1, pp. 58—77. (In Russ.).

11. Vygotsky L.S. Psikhika, soznanie, bessoznatel'noe [Mind, consciousness, the unconscious]. In K.N. Kornilov (ed.). *Elementy obshchei psikhologii (Osnovnye mekhanizmy chelovecheskogo povedeniya)* [*Elements of general psychology (Basic mechanisms of human behaviour)*]. Moscow: Byuro zaochnogo obucheniya pri pedfake 2 MGU Publ., 1930, pp. 48—61. (In Russ.).

12. Galperin P.Ya. *Vvedenie v psikhologiyu: Uchebnoe posobie dlya vuzov* [Introduction to psychology: Textbook for universities]. Moscow: Knizhnyi dom "Universitet" Publ., 1999. (In Russ.).

13. Zaporozhets A.V. Rol' L.S. Vygotskogo v razrabotke problem vospriyatiya [The role of L.S. Vygotsky in the development of perception problems]. *Voprosy psikhologii* [*Questions of Psychology*], 1966, no. 6, pp. 13—24. (In Russ.).

14. Zinchenko V.P. Ot klassicheskoi k organicheskoi psikhologii [From classical to organic psychology]. *Voprosy psikhologii* [*Questions of Psychology*], 1966, no. 6, pp. 6—25. (In Russ.).

15. Ilyenkov E.V. *Ideal'noe. I real'nost'. 1960—1979* [*The ideal. And reality. 1960—1979*]. Moscow: Kanon+, 2018. (In Russ.).

16. Leontiev A.A. Aleksei Nikolaevich Leontiev rasskazyvaet o sebe [Aleksei Nikolaevich Leontiev tells about himself]. *Voprosy psikhologii* [*Questions of Psychology*], 2003, no. 2, pp. 33—42. (In Russ.).

17. Leontiev A.N. *Deyatel'nost'. Soznanie. Lichnost'* [*Activity. Consciousness. Personality*]. Moscow: Smysl Publ.; Akademiya Publ., 2004. (In Russ.).

Т. 3. Проблемы развития психики. М.: Педагогика, 1984. С. 5—328.

4. *Выготский Л.С.* Исторический смысл психологического кризиса // Собрание сочинений: в 6 т. Т. 1. Вопросы теории и истории психологии. М.: Педагогика, 1982. С. 291—436.

5. *Выготский Л.С.* К вопросу о компенсаторных процессах в развитии умственно отсталого ребенка // Собрание сочинений: в 6 т. Т. 5. Основы дефектологии. М.: Педагогика, 1983. С. 115—136.

6. *Выготский Л.С.* К вопросу о психологии творчества актера // *Якобсон П.М.* Психология сценических чувств актера. М.: ГИЗ, 1936. С. 197—211.

7. *Выготский Л.С.* Мышление и речь: Психологические исследования. М.; Л.: Соцэкгиз, 1934.

8. *Выготский Л.С.* Орудие и знак в развитии ребенка // Собрание сочинений: в 6 т. Т. 6. Научное наследство. М.: Педагогика, 1984. С. 6—86.

9. *Выготский Л.С.* Педология подростка. Задания № 9—16. М.; Л.: Учпедгиз, 1931. С. 174—504.

10. *Выготский Л.С.* Проблема культурного развития ребенка // Педология. 1928. № 1. С. 58—77.

11. *Выготский Л.С.* Психика, сознание, бессознательное // Элементы общей психологии (Основные механизмы человеческого поведения) / Под ред. К.Н. Корнилова. М.: Издание Бюро заочного обучения при педфаке 2 МГУ, 1930. С. 48—61.

12. *Гальперин П.Я.* Введение в психологию: учеб. пособие для вузов. М.: Книжный дом «Университет», 1999. 332 с.

13. *Запорожец А.В.* Роль Л.С. Выготского в разработке проблем восприятия // Вопросы психологии. 1966. № 6. С. 13—24.

14. *Зинченко В.П.* От классической к органической психологии // Вопросы психологии. 1996. № 6. С. 6—25.

15. *Ильенков Э.В.* Идеальное. И реальность. 1960—1979. М.: Канон+, 2018. 528 с.

16. *Леонтьев А.А.* Алексей Николаевич Леонтьев рассказывает о себе // Вопросы психологии. 2003. № 2. С. 33—42.

17. *Леонтьев А.Н.* Деятельность. Сознание. Личность. М.: Смысл; Изд. центр «Академия», 2004. 352 с.

18. *Леонтьев А.Н.* Развитие памяти. М.; Л.: Учпедгиз, 1931. 278 с.

19. *Леонтьев А.Н.* Философия психологии: Из научного наследия. М.: Изд-во МГУ, 1994. 228 с.

20. *Шиф Ж.И.* Развитие научных понятий у школьника: Исследование к вопросу умственного развития школьника при обучении обществоведению. М.; Л.: Учпедгиз, 1935.

21. *Cole M., Gajdamaschko N.* Re-visiting Vygotsky's concept of *vrashchivanie* (ingrowing): A focus on metaphors // Social Epistemology Review and Reply Collective. 2022. Vol. 11. № 11. P. 59—68.

18. Leontiev A.N. *Razvitie pamyati* [*The development of memory*]. Moscow, Leningrad: Uchpedgiz Publ., 1931. (In Russ.).

19. Leontiev A.N. *Filosofiya psikhologii: Iz nauchnogo naslediya* [*Philosophy of psychology: From the scientific heritage*]. Moscow: MGU Publ., 1994. (In Russ.).

20. Shif Zh.I. *Razvitie nauchnykh ponyatii u shkol'nika: Issledovanie k voprosu umstvennogo razvitiya shkol'nika pri obuchenii obshchestvovedeniyu* [Development of scientific concepts in a schoolchild: Researches on the question of mental development of a schoolchild in teaching of social sciences]. Moscow, Leningrad: Uchpedgiz Publ., 1935. (In Russ.).

21. Cole M., Gajdamaschko N. Re-visiting Vygotsky's concept of *vrashchivanie* (ingrowing): A focus on metaphors. *Social Epistemology Review and Reply Collective*, 2022. Vol. 11, no. 11, pp. 59—68.

Information about the author
Andrey D. Maidansky, PhD in Philosophy, Professor of Philosophy, Belgorod National Research University, Belgorod, Russia; Professor, UNESCO International Chair of Cultural-Historical Psychology of Childhood, Moscow State University of Psychology and Education, Moscow, Russia, ORCID: https://orcid.org/ 0000-0003-2061-3878, e-mail: caute@yandex.ru

Информация об авторе
Майданский Андрей Дмитриевич, доктор философских наук, профессор кафедры философии, Белгородский государственный национальный исследовательский университет (ФГАОУ ВО НИУ «БелГУ»), г. Белгород, Российская Федерация; профессор Международной кафедры ЮНЕСКО «Культурно-историческая психология детства», Московский государственный психолого-педагогический университет (ФГБОУ ВО МГППУ), г. Москва, Российская Федерация, ORCID: https://orcid.org/ 0000-0003-2061-3878, e-mail: caute@yandex.ru

Получена 28.05.2024
Принята в печать 10.08.2024

Received 28.05.2024
Accepted 10.08.2024