

# נגישות והתפתחות קוגניטיבית

על תכנית המחקר החברתית-תרבותית של ויגוצקי והבנת  
ההתפתחות הקוגניטיבית של אנשים עם (כל סוג של)  
מוגבלות\*

**Implications from Vygotsky's socio-cultural research  
program:  
Understanding cognitive development of children and  
adults with (all kinds of) disabilities.**

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Inclusion of people with disabilities no doubt depends on social attitudes. However, social attitudes alone are not enough for actually achieving and improving the opportunity for normative cognitive development of people with disabilities. Social attitudes can only be a starting point for taking into consideration the abilities and needs of people with disabilities when designing and building the environment, planning and organizing cultural practices and developing suitable procedures.

I argue that accessibility of the physical/built environment, the ability to access and thus to participate in social practices (in adequate and favorable conditions) in addition to access to all the culturally available cultural means (including assistive means and technologies) are crucial precondition for

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**The Development of Cognition, Cultural Knowledge and Alternative Means of  
Communication**

צוות קבוצת המחקר (לפי סדר ההרצאות):

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normative cognitive development of children and adults with disabilities and for their full inclusion in society in all spheres of life.

Vygotsky's socio-cultural scientific research program offers a comprehensive explanatory framework for my argument.

Vygotsky did not discuss the impact of physical accessibility of the built environment on the cognitive development of people with disabilities. He did not elaborate on the importance (in fact necessity) of physical accessibility for the ability and opportunities of people with different kinds of disabilities to access socio-cultural practices and its implications for their cognitive development. He rightly assumed that any disability that does not directly affect the ability for full cognitive development, need not disturb (or detain) the normative cognitive development of the child with that disability. Though he discussed the effect of visual and hearing impairments on the cognitive development of the child, he did not consider the secondary yet crucial effect of a non-accessible physical (and/or social) environment on the actual opportunities available to the child (or adult) with the disability to achieve full and normative cognitive development.

A comprehensive understanding of Vygotsky's socio-cultural theory shows that Vygotsky's research program in fact offers guidelines for understanding the crucial impact that accessibility of the physical/built environment – including access to acquisition of cultural means and to participation in socio-cultural practices – may have on the cognitive development of people with any kind of disability.

Vygotsky founded the socio-cultural school of psychology in the Soviet Union during the late 1920s and the 1930s together with his colleagues Alexander R. Luria and Aleksei Leont'ev (Kozulin 1984; 1986; 1990; Van der Veer and Valsiner 1991). His research program is based on the philosophical foundations of historical materialism with its emphasis on cultural tools/means

and socio-cultural practices (For the Marxist context of the socio-cultural school of psychology see: Eilam 2003)

According to the socio-cultural school of psychology, cognition, in fact all the higher mental functions, cognitive skills and behavior that are uniquely human, develop and form during the history of human social life as a consequence of social (material and theoretical) practice. The emphasis here is on the fact that human practice depends on cultural means such as means for production (i.e. tools) and means for social communication, i.e. signs, and sign systems such as language, or in more general terms, means of representation.

Cognitive development (the development of higher mental functions and cognitive skills) is a product of a person's interrelations with his/her environment. Human beings are always born and live in a socio-cultural environment, which includes people, products, tools, and means that are historically developed and accumulated. The socio-cultural environment is the source for the tasks each person encounters on the one hand and, on the other hand, for the cultural means available for performing these tasks. The term "cultural means" refers to both material and representational means, since both kinds of means are cultural products.

According to Vygotsky's socio-cultural research program, mental/cognitive functions are not direct products of the human brain or human biological evolution. This approach does not underestimate the importance of the biological evolution of the human organism and the human brain or the importance of biological, genetic and physiological properties of the human organism in general and of each and every person in particular. Rather it is claimed that the emergence and development of mental functions (i.e. cognitive functions and skills) depend on the appropriation of cultural means (Vygotsky 1981a; 1981b). However, cultural means can be applied in a wide variety of ways and can accordingly be ascribed different meanings

depending on the way they are applied within social practice. Therefore appropriation of cultural means requires acquisition not only of an object but also of its socio-cultural meaning. For example it is not enough to own an ax as an object, but it is also necessary to learn its mode of application as a tool within the social practice of a certain culture. Likewise the appropriation of a spoken word requires not only the ability to pronounce the word or to hear it, but also the knowledge how to use it within a specific language. Hence appropriation is achieved within practice by social interactions.

In fact appropriation of cultural means is essentially an active process. The child first reacts to the adult's activity and imitates it. Vygotsky described this process as inter-psychological. Later on, the child uses the cultural means independently, at first externally, for instance by using external speech to direct its own behavior. Gradually external speech is internalized (according to Vygotsky through a stage of egocentric speech) and used for the internal, intra-psychological control of behavior. During this process the child's mental functions develop from elementary direct processes, depending on the immediate situation, to higher complex mental functions mediated by appropriated and internalized cultural means. By this process, planned behavior is developed. That is, the task is determined, the realization planned, the plan is carried out, and the end result is compared with the envisaged outcome (Luria 1974/1976; 1979).

Since the development of higher mental functions and the corresponding human behavior depend on active relations of the individual within his/her specific socio-cultural environment, higher mental functions cannot be innate. Moreover, although mental functions belong to a specific individual, they are not "purely" subjective since they depend also on the objective physical and social environment and therefore reflect to some extent properties of this objective reality. The objective reality in which an individual lives and acts is not "purely natural" but includes products of former human social activity. The objects in the environment are endowed with socio-cultural meaning (Luria

1974/1976). Hence mental functions are determined by the historical form of social practice, which depends on the biological and historical subject, on the cultural means, and on the objective reality within which it takes place (Leontjew 1982). This socio-cultural approach emphasizes the differences not only in the content but also in the *structure* of mental functions within different cultural and historical environments (Luria 1974/1976). These differences are a consequence of the differences in practice and in available cultural means.

Yet appropriation of cultural means depends on having access to the available cultural means, to the acquisition of these means and to socio-cultural practices. Therefore, the structure of mental functions of different individuals may vary not only among different cultures but also within the same culture, depending on the individual's activities and participation within social practice. These activities depend on the individual's position and social role. For people with disabilities these activities also depend on the accessibility of the physical/built environment (which is a precondition for their ability to participate) and on social attitudes, namely on their being socially accepted and included in these social practices.

Of course cultural change is possible, and occurs when individuals discover new ways of applying cultural means that contribute to culture.

### **Some Conclusions:**

1. The development of higher mental functions (cognitive abilities and skills) is not an innate decree. Society is fully responsible for the cognitive development of each and every one of its members.

Without suitable and appropriate opportunities to acquire cultural means and participate in cultural practices the cognitive development of children or adults with or without disabilities will be detained. For people with physical disabilities these opportunities also depend on physical accessibility of the physical/built environment. In other words, inaccessibility to social practices

due to physical or social barriers will detain/disturb and impair cognitive development of people with disabilities.

2. Most of Vygotsky's psychological research concentrated on the role of representational means, especially language, in the development and structure of higher mental functions (Vygotsky 1934/1986). However, in the early 1930s Vygotsky together with Luria also studied the relations between the development of physical activity with cultural means and cognitive development (Luria 1974/1976; Vygotsky and Luria 1930/1993; Vygotsky and Luria 1930/1994).

Vygotsky's research program emphasizes the important role of all cultural means: representational means as well as tools for production and consumer goods.

Means of transportation, means of communication, writing tools and print, medicines, medical equipments (such as spectacles, wheelchairs, induction loops, alternative communication means etc.) often determine a person's ability to participate in social and cultural practices, and thus to acquire and apply cultural means, including representational means. In our contemporary technological society, the importance of tools for production and consumer goods for cognitive development is especially prominent.

Some examples:

- a. Medical equipment such as a hearing aid (sometimes too expensive for the person who needs it) can enable a child or an adult with a hearing impairment to fully participate together with hearing people in social practices.
- b. Accessibility of the built environment for people with a physical disability plus appropriate mobility aids are essential to enable children with mobility impairments to be full participants in the acquisition of cultural means together with all the other children.
- c. Accessibility of the built environment and appropriate medical equipment are often just as important in order to enable adults with disabilities to fully

participate in society to the best of their abilities, to apply the cultural tools that they acquired as children and to contribute to culture and society.

3. Contemporary means of communication have not only changed our way of life for everyday activities, but have also changed the cognitive skills necessary for everyday functioning in our society.

Some examples:

- a. Nowadays working in an office includes fast flow of all kinds of visual and audio information and an immediate professional response. Not so long ago, it would take days to transfer information by post, This change in the kind of activity no doubt requires a change in the way we think and act, in our cognitive skills, in the structure of our thoughts.
  - b. Cellular phones and the internet have entirely changed the patterns of everyday communication between people, as well as the necessary abilities and skills needed to maintain such communication. Vygotsky emphasized the difference between spoken language and written language. He maintained that spoken language is characterized by its dialogue style and is usually abridged, while written language is characterized by its monologue style and therefore has to be more elaborate. However, the use of written language in internet "conversations" and SMS is usually abridged (often even using single letters and signs instead of words). In these media written language is used in a direct dialogue style.
4. What and how a person thinks or feels, the content of one's thoughts, the way a person perceives him/herself, others, his/her expectations from his/herself and from the environment, what a person wants, how a person behaves, all depend on his/her activity in the socio-cultural environment during his/her personal history and on the access he/she had during his/her life (as a child and as an adult) to acquiring and applying the existing cultural means. The successes and the failures of an individual and the way the

individual interprets (in thoughts and emotions) his/her life conditions and deeds as success or failure are not exclusively that person's responsibility.

5. Cognitive development continues throughout a person's entire life. This developmental process changes at different periods during a person's life depending on biological age, mental age, (including the "Zone of Proximal Development", in Vygotsky's terms), abilities, the higher mental/cognitive functions that have already developed, the cultural tools that have already been acquired, and the behavioral skills that developed during the personal history of that person.

Culture and biology are closely intertwined. Although genetic and physical properties may somewhat limit a person's ability to acquire and apply certain cultural means in what is socio-culturally accepted as a normative way, the use of appropriate aids can often enable full cognitive development of higher mental functions for people with different kinds of disabilities such as learning disabilities.

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