

ROLE OF LANGUAGE IN CHILDREN'S INTELLECTUAL DEVELOPMENT

VYGOTSKY: Thought, Language, and Culture

In Vygotsky's philosophy, language plays a central role in the theory of human cognitive development. Language plays multiple roles including culturally shaping the overt behaviour of individuals as well as influencing their covert behaviour, such as thinking. Language has been defined as a psychological tool that shapes other mental functions while at the same time being socially-shaped itself (Kozulin, 1986). Vygotsky believed that language and thought initially have different roots but converge during the course of development and are influenced bi-directionally thereafter (Kozulin, 1986).

To understand Vygotsky's theory of individual consciousness, first we need to conceptualize thought as socially based (Vygotsky, 1979). In his view, higher mental functions are products of psychological tools such as **verbal language, sign language, and logic**.

The use of socially-mediated language allows for interpersonal communication. Pre-intellectual language (e.g. screaming or cooing) and pre-intellectual thought (e.g. wants and needs) may develop concurrently but separately in children. Thought and speech begin as separate functions, with no necessary connection between them, but **around age two language and thought come under bi-directional influence, when a child learns to functionally use social tools (such as verbal behaviour)**. Until the child is able to learn or relate his/her actions to the social-environmental contingencies language cannot be acquired. Around this age, a relationship between language and cognition begin to develop. The relationship is more than the formal relation between the sign (or word) and its meaning. **Language and other socially learned relations alter thought by setting up formal logical rules (derived relational systems) and methods of problem solving that are entirely verbal in nature (Vygotsky, 1986).**

Vygotsky (1986) proposes that the first general concept acquired by verbal children is the understanding that every object should have a name. After the child is able to name objects, he/she can then express thoughts in the form of needs and wants. **Once the child is able to name, and express wants, language and thought begin a reciprocal interaction that shape the form of thought and language through environmental experience and inner speech.** The social shaping of appropriate vocal noises is dealt with in behavioural theory by differential reinforcement. The parents or caregivers give more attention to a child when they make noises that more closely approximate words. **After the child has been able to properly produce the sounds of a word they get social attention that increases the future likelihood of similar responses** (Skinner, 1953). After mastering the sounds needed to name an object the child can then use the name of the object first as an echoic (repeating the name after a verbal prompt), then as a tact (naming an object in the presence of the object) and as a mand (a demand or request for nonverbal action on the part of the listener). The child in this manner learns to name the object in the presence of a verbal prompt, learns to name the object in the presence of the object, and learns that by requesting an object in its absence he/she can acquire the object from

the listener (Peláez, 1986). By repeated exposure the person can come under the functional control of the object (Skinner, 1957).

Inner speech

Vygotsky (1986) states that inner speech (private verbal behaviour) is acquired in the same manner that all other mental operations are learned (including vocal speech). In language acquisition, the child starts forming words and is able to use the correct forms of grammar and structure before he/she has learned the formal rules of grammar. As the child becomes more experienced he/she begins to use external prompts, cues, and verbal behaviour in the form of instructions to aid in problem solving. This is the beginning of egocentric speech. Egocentric speech is a form of self-talking with the function of inner speech, but an external form (a form of speech that has the **function of altering the speakers own behaviour**). *Examples of egocentric speech are reading to one-self quietly, verbally sounding out words, and counting on ones fingers. As egocentric speech develops the child is able to begin “internalizing” the outward form of language or using soundless speech, to count in his/her head and use logical memory (operate with given relations and derived relations in private verbal behaviour). After the person comes under the functional control of language, language begins to have a large reciprocal effect with thought.*

Thought and language are seen by Vygotsky (1986) as two interacting spheres. In his view, speech is involved in most thought, and thought is involved in most speech. However, development of thought and speech are not parallel. For example, there are aspects of thought such as emotions (e.g., anger, joy, disgust) that can be verbally discussed, but are not verbal in nature. That is, we can describe our own emotions but the experience of emotions is not necessary verbal. Conversely there are parts of speech in Vygotsky's conceptualization that do not require thought, such as reciting a well-known poem or prayer. While these spheres are mostly overlapping, the processes of thought and speech are not the same, even though both are influenced “indirectly by the process of verbal thought” or inner speech (Vygotsky, 1986).

An example of this interaction would be a person who smells a particular kind of flower and then remembers (through a history of conditioning) a long lost lover who used to ornament his/her house with this kind of flower. As the person uses inner speech in creating imaginary dialog of this memory he/she may experience sadness realizing that they should not have ended the relationship with this person (emotional response). **In this case inner speech may affect and increase emotions indirectly. Reciprocally thoughtless speech (such as a recital of an extremely well known poem) can be influenced by inner speech by word substitution (e.g., saying the ex-lovers name in place of a similar sounding word in the poem).**

In short, the bifurcation of function and structure of inner speech begins at the same time as the emergence of egocentric speech. For Vygotsky thought development is contingent on language, and language is socially determined. In this way a child's environment, and culture, play a pivotal role in language and thought development.

Skinner and Vygotsky

Similarities exist between Vygotsky's inner speech and Skinner's private verbal behaviour. Both Skinner (1957) and Vygotsky (1986) state that thinking is a process learned from the verbal community, and **learning to think is no different than language acquisition or other**

socially-learned behaviour. Skinner goes so far as to say verbal behaviour has no special properties and obeys no special laws when compared to other types of behaviour (p.438). Vygotsky's egocentric speech is considered language (or verbal behaviour), but the function of egocentric overt behaviour (develops simultaneously with inner speech) is different from the function of vocal verbal behaviour (e.g. directed speech). The function of egocentric speech is to modify the behaviour of the speaker (Vygotsky, 1986). This notion of a changed function, with the internalization of speech, is consistent with Skinner's statement that any speaker can be their own listener, and that individuals engage in self-editing. The similarity of the two positions in the acquisition of language and thought, or public and private verbal behaviour, is central to both theories because they philosophically share an externally based causation (that is, environmental determinism).

A Skinnerian interpreting the above example may conclude that a person who smells a particular kind of flower and remembers a long lost lover who used to ornament his/her house with this kind of flower because the response is under stimulus control of the smell of the flower). If the person uses inner speech in creating imaginary dialog of this memory (hearing in the absence of the thing heard) he/she may experience sadness or a similar emotion realizing that the person is not present any longer (emotional response influenced by absence of a source of reinforcement). In this case, the speaker acting as his/her own listener, may produce a verbal stimuli which evokes an emotional reaction on the part of the listener (in the same skin). Reciprocally verbal behaviour (such as saying the ex-lovers name accidentally in place of a similar sounding word in the poem) can be influenced by multiple sources of control and response strength.

Emotions are considered by Skinner to be a reaction (or collateral byproduct) to environmental stimuli. Skinner (1957, p. 155) states: "The emotional reaction is usually a by-product of some other verbal function" and Vygotsky (p.78, 88) argues that emotions are part of our thinking, which is indirectly influenced by inner speech, but not verbal in nature. Consequently, both Skinner (p.215) and Vygotsky (p.88) state that emotions can influence verbal behaviour just as they can be influenced by verbal behaviour but they are not verbal in nature.