

## The Supra-Communicative Functions of Language

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**Abstract:** I will present my comprehension of Clark's ideas examined in 'Magic words: how language augments human computation'. I shall start by reviewing some classic views about supra-communicative functions of language contributed by other thinkers. Then, I will discuss six ways proposed by Clark about how language complements the activity of human brain. Next, I will evaluate how language works to cognition within the example of mangroves. Finally, the idea of extended mind will be studied with the question of 'where the mind ends and the rest of the world begins' (1998: 181). From the contextual standpoint, I focus on Waldorf education which is also called as Steiner schools. Founded by Rudolf Steiner, Waldorf education provides a curriculum emphasizing on art education and experiential learning, without standardized assessment (Sobo, 2014). Based on anthroposophy, the philosophy of Waldorf education is to cultivate the wisdom of students and develop students' thinking, feeling and willing. Different with mainstream schooling, Waldorf schools have their own pedagogical practices and teaching strategies. In this essay, I will attempt to explore and analyse Clarks' ideas through answering the question of how these ideas are embedded in the philosophy and practices of Waldorf education.

### 1. Introduction

It is argued by Clark (1998) that one serious problem with one possible function of language as a self-directed tool is how it works to guide and direct actions. It is because that people cannot tell themselves anything that they do not already know. To explain how the inner code works, Peter Carruthers (1996a) claims that public language itself is a kind of thought. In other words, inner speech literally contains the process of inner thinking. Hence, people's various thoughts are made up of words and sentences of language. Interestingly, Carruthers furthers and highlights that 'the thinking is the writing' (1996a: 52), which means that having personal thoughts does not come before writing them down. Subsequently, Clark (1998) champions alternative angle of writing. He sees writing as an environmental manipulation transforming the challenge space for brains.

Likewise, Daniel Dennett (1991) claims an alternative way to demonstrate the supra-communicative perspective of language. He advocates that the language inputs alter and re-programme the activity and structure of human brain. It is the subtle and opaque change of brain that boosts human consciousness of the sense of self, as well as differentiates human beings from other animals in terms of behavioural and cognitive development and achievements. On this condition, Dennett (1995) highly values the special and programmable human brain modified by culture and language, facilitating people's advanced cognitive skills. The relatively subtle differences between human and animals encourage people to create and benefit from language and cultural improvements. Unlike Dennett, Clark (1998) prefers to consider public language to be an external resource complementing but not merely altering the brain. The subtle re-programming of brain at its computational level is superficial. The change, nonetheless, encourages people to try to explore and use external resources to the full. Thus, culture and language should not be treated as merely external resources.

## **2. Six Way**

Having discussed both commonsense and preserved views about functions of language, it is worthwhile to look six ways added by Clark (1998) of how language improves the cognitive ability in human brain.

### **2.1 Enhance memory**

Clark sketches the view of memory augmentation which is beneficial from the use of texts, notes, diaries, simplifying environment, easing the burden of memory, and creating more space for dealing with information.

### **2.2 The utility of linguistic labels**

The learning environment can be simplified by the utility of linguistic labels such as the signs for city centers, shops or names. These clues allow students to get their targets easily and quickly without learning for a long time or knowing in advance, as well as improve and speed students' learning.

In Waldorf schools, there are written labels informing children the names of locations, timetables reminding children to do different things in corresponding time, and slogans prompting children how to think or behave. Besides, as for the teaching strategies, small cards with letters or numbers are used to help children learn knowledge.

More strikingly, the nature table in Waldorf kindergartens plays the same role with language as the various objects reflect what are happening at that time, as well as help children study from different things (Nicol and Taplin, 2012).

### **2.3 Action coordination**

Language ameliorates the coordination of actions and reduces the deliberation. More specifically, people can make their plans including time or address explicit and clear, so that other people can adjust their schedules accordingly. This orchestration of activity minimizes uselessly personal efforts and improves life efficiency by following properly-sequenced plans. Moreover, this coordination of linguistic exchange is good for collaborative problem-solving. It motivates the other to concentrate on some aspects of problems, and encourages them to work on some aspects of problems that may be ignored. This function is beneficial to manage one's attention and allocate resources. Importantly, the explicit plans help avoid messing arrangement of daily business, although new information and situations sometimes can also lead to revise of plans. By and large, explicit plans and clear intentions can block unnecessary hesitation, non-efficient reassessment or useless choices (Bratman, 1987).

In classroom, this function is applied to varied practices highlighting significance and sequence. For example, in a Steiner kindergarten, children learn from practical activities. When they objectively observe adults to do handcrafts, cook or draw a picture with skills, concentration and perseverance, not only can they mimic adults' behaviour and attitudes, but they also can gain skills and develop knowledge, solving the problems by themselves gradually. Generally speaking, positive adult activities should be seen as a foundation for children to imitate, learn, internalized, use, and to support their later studying as well as understand and connect to the real world (Nicol and Taplin, 2012). More strikingly, the self-initiated play in Waldorf schools actually reflects the idea of children's private speech. Children are encouraged to choose what to play and how to play by themselves, which is the processes for children to talk to themselves, meet their needs, make their own conclusions and develop themselves (Nicol and Taplin, 2012). In this play, they start to discover the physical rules and world structure, experience creativity and cooperation and facilitating their problem-solving capability and communication skills (Clouder and Nicol, 2008). Most importantly, children gradually learn their own personality and become self-motivated.

### **2.4 Path dependent learning**

Clark (1998) analyzes path dependent learning. It emphasizes the sequence of learning, which means that people should learn the new knowledge, understand certain concepts or complete tasks

with certain order from the easy to the hard. A good prior learning lay a foundation for studying new regularity in the future, exploring better options and bringing time benefits. It can be concluded that there exists a natural sequence of learning. Students should learn from the known to unknown and they could not grasp systematic knowledge system with disordered learning. Using public language creates more connections and provides individuals with the opportunity to evaluate their thoughts in a broader social arena.

## **2.5 The function of attention and resource allocation**

Clark's talk about the function of attention and resource allocation. Based on McClamrock's (1995) words, there is no signal sent from flies' brains to their wings when they fly. Instead, it is a direct behaviour for flies to flap their wings when their feet stop on a surface. As well, when flies take off, they do not use their brains and any control system. Similarly, when people are guided by spoken or written instructions to finish tasks or gain skills, they are able to know what to focus on and what should be ignored. Owing to these instructions, people do not need spend time on thinking about what should be done next.

These changes are considered merely as a kind of complement by Clark (1998), but the repetition of certain actions and the efforts to solve problems can result in real changes in human brain. This idea is explained by Dennett (2009) who claims that everything a person learns, does and then changes gives rise to revise some processes of brain.

Similarly, children's learning language in Waldorf schools reflects the process discussed above (Childs, 1991). Children are encouraged to perceive language directly instead of spending time and space on understanding or intellectualizing it. This learning is concluded as absorption which is achieved through reflection and consciousness of study or various functions of cognition.

## **2.6 Written operation and presentation of data**

The last benefit considered by Clark is data manipulation and representation via written text. That is to say, by writing, revising, re-arranging, sequencing, storing text or making notes and annotations, the brain becomes more powerful and the thinking will be augmented. Taking writing this essay as example, after I read through my own texts and re-read Clark's articles, I re-think and adjust my writing. By doing so, I can be reminded of where I should head, which is a process affecting both inside and outside of my brain, manipulating data and ideas and making my mind clearly. These benefits would not be achieved without multiple external resources of written texts.

Furthering written text to the relationship with external world, it is not hard to comprehend why Steiner schools concentrate on environmental education. Most Waldorf settings, located in rural area, have outdoor space serving beauty and practicality (Nicol and Taplin, 2012). With herbs in the gardens, children know that herbs can be added into tea and soup. Playing with livestock like chicken, children gain the knowledge about chicken like their biological features, as well as bud love, sympathy to animals. Thus, the activities such as cleaning, washing, planting, climbing or watering, encourage children to be happy and clam, and wake up their aesthetic ability, creativity and imagination. Additionally, environmental education allows children to learn knowledge in vivid way and train their problem-solving ability and independence. Thus, this is an education that combines environment, teachers and students. Cooperating and learning with external environment and people, children gain more knowledge and comprehension as well as start to explore and change themselves, achieving the improvement of cognition.

## **3. Mangroves and meta-cognition**

'Thinking about thinking' is a distinctive human capacity in the process of meta-cognition. In the eyes of Clark (1998), it is the speaking words or writing words that enable people to create some new external possibility about thoughts. These thoughts can inspect, judge, spot flaws, refine, evaluate, combine other complexes of perceptions or make some subtle alterations to the original idea.

Considering this process, Clark conjects that human thoughts may not only be extended by or reflected in public language but directly rely on language.

In the process of tuning, refining, investigating, and building on ideas, language plays an important role. Like the aerial roots of mangrove, the inner rehearsal of words is not rooted in the fertile soil of existed thoughts but significant to decide the direction and meaning of the thoughts. When people express and externalize their thoughts in sentences which are memorable and modality transcending, they can inspect and criticize themselves, including analyzing, evaluating, synthesizing and thinking about remedial response to their thoughts, so that their cognitive horizons are extended and augmented effectively, without the burden of starting again from contents of pre-linguistic thoughts. By and large, the sentence mode of thought helps fine tune and refine the idea, facilitating and increasing cognitive achievements of individual.

#### **4. Conclusion**

In this essay, I attempt to explore and present my understanding of Clark's views. Besides, I try to comprehend and analyze these ideas through combining the practices and philosophy in Waldorf education and rethinking my personal experiences in daily life.

In conclusion, language is a powerful tool making us uniquely human being. The language augments our cognitive ability and enables us to have an-intimate and harmonious connection with external world. The theories of relationship between language and cognitive improvement are significant for education. It is my own idea that with the help of language, we can learn knowledge and acquire skills. The improvement of cognitive capability helps us appreciate the world and deal with people and activities in our daily life. Most importantly, we can better know about ourselves through listening, speaking, reading and writing. This self-cognition, namely self-consciousness contains the abilities to know about what we want and need, and in which way we can look at the experiences and get along with friends or families. After all, those who have a good relationship with themselves are more likely to have better connection with outer world. Thus, self-consciousness should be highlighted and cultivated through education.

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