**Resumo do artigo de Lockman, J. J. (2000).**

**“A perception-action perspective on tool use development.”**

The author briefly reviews the main theoretical concepts regarding tool use development and points out the discrepancies between the theoretical framework and natural observations. Instead of considering that tool use results from a discontinuous achievement requiring a new level of representational thinking, the author argues that tool use stems from continuous and gradual skill elaboration through environment exploration and perception-action routines. Therefore, a different developmental approach is advocated, focusing on within-subject variability of tool use behaviors rather than between-subject comparisons. Practically, it requires a methodological transition from investigating behavioral mean scores between subjects to behavioral variabilities within-subjects. The author contends that this individual perspective may yield novel and interesting information about tool use development in children, particularly in observing trial-and-error performance variability.

Besides, from a theoretical standpoint, the author suggests a new framework in which the development of tool use in infants requires both detecting potential affordances between objects as well as a more complex establishment of relations between these affordances. Regarding this conceptual problematization of tool use, the author contends that relating affordances can be seen as a spatial problem involving the coordination of mobile frames of references such as tool sides or parts. Therefore, in order to understand how children align objects' surfaces and thus, more broadly, how they use tools, it is advocated in the article to use a process-based approach rather than an outcome-based one.

Finally, from an evolutionary standpoint, it is argued to take into consideration action patterns in understanding the origin of tool use. The author advocates investigating developmental motor capabilities in infants and action patterns used for exploring the environment in relation to motor skills and behaviors required in later tool use. Indeed, it is suggested that tool use is shaped by motor precursors already present in the infancy period.

**Questões sobre o artigo de von Hofsten, C. (2009).**

**“Action, the foundation for cognitive development.”**

To me, this article gives a new fundamental vision to life. A new order of life functions. Usually, I think that we perceive our environment in order to react and adapt, however in this article, the author defends the reversed theory that we act in order to feel and adapt. Maybe I have just been shortsighted because what I considered “perception '', such as visual stimuli, was already movement and action of the eye for instance. Extraction of information from the environment seems indeed to always be preceded by action and movement. Then I wonder about internal states. Could the perception of our emotions be the result of the action of our body such as contractions, dilatations and different regulations? What other perceptive influence could our organism have?

It is really interesting to reset the view on life dynamics. Life is movement. Behaviors can now be seen as the cause and as the result of our perception, in an endless loop of living.

Regarding the understanding of others’ actions, considering the Theory of Mind (ToM) and the Mirror Neuronal System (MNS), both seem interesting and difficult to negate. When theoretical “battles” last for some time with researchers unable to opt for one or the other, it occurs to me that it may be both. It already happened in the scientific literature that the reunion of conflicting theories did not make a contradictory framework but on the contrary, a more complete one, and I always find it inspiring. Here, it seems plausible. Infants could anticipate others’ movements or intentions through a MNS based on their own life experience and possibly along the children's development, this perception of the “other” could elaborate a more cognitively complex perception, with the internal consideration of a different self for others?