

The Cultural Patterning of Cognitive Development

Commentary on Allen and Lalonde

Monica Tsethlikai

Sanford School of Social and Family Dynamics, Arizona State University, Tempe, Ariz., USA

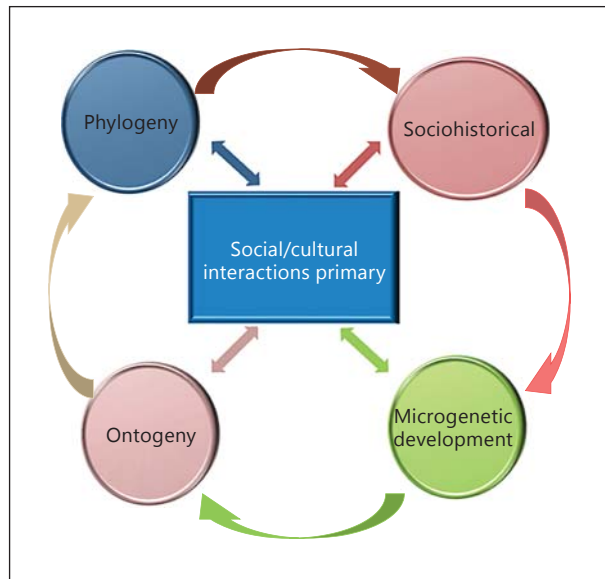
Key Words

American Indian · Cognitive development · Culture

Allen and Lalonde [this issue] provide a case study of education programming which richly demonstrates the utility of culturally based teaching for all students. The cultural heart of First Nations and indigenous cultures throughout the world is oral storytelling, yet this traditional way of teaching is rarely considered a viable form of instruction in Westernized educational settings. In commenting on this work, the implications for understanding cognitive development as a historically grounded process of cultural patterning from the interpsychological to the intrapsychological is discussed and the possibility of using culturally based narrative instruction to preserve indigenous ways of knowing is explored.

Historically Grounded Theories of Culture

The turn away from reductionist theories to multidisciplinary/interdisciplinary theories that seek to understand human development as a synthetic, coactional system has produced a large number of studies that have integrated across variables from multiple domains from the biological to the contextual. However, a focus on cultural and historical factors has largely remained absent as acknowledged by Thelen and Bates [2003]. One facet of Vygotsky's [1978] theory that has been understudied is that cognitive development must be understood as evolving across the history of a people.



Color version available online

Fig. 1. Visualizing Vygotsky's theory of cognitive development.

Thus, Allen and Lalonde's embedding of their use of culture within a Vygotskian framework caught my interest:

For this reason, our use of the term culture is based in Vygotskian approaches that conceptualize culture as a "medium" through which people act, as well as perspectives that stress the historically based nature of cultures and cultural practices and the developmental competencies that participation in cultural practices affords individuals.

However, there was no discussion of how historically based cultural practices actually differ from cultural practices in general. Very few researchers acknowledge the importance of this historically grounded view of development [with Saxe, 2012, an exception as noted by Allen and Lalonde]. More often, there is a call for us to acknowledge that we all have "cultures" that shape development. This begs the question: Do all cultural practices share the same level of meaningfulness and impact, or might there be something special about historically grounded cultural practices that have evolved across generations?

In my interpretation of Vygotsky's work (see fig. 1), which was heavily influenced by the paper published by Wertsch and Tulviste [1992], I view cognitive development (and *the tools of the mind*) as grounded in the evolution of a people (phylogeny) with the use of these tools impacted by the sociohistorical context in which the individual moments of instruction take place (microgenetic development), with these moments of instruction culminating and transforming these tools over an individual's lifetime (ontogeny) with the individual then passing on these adaptations to the next generation. Of primary concern to my work in indigenous communities in the United States is the impact that colonization and cultural genocide have had on indigenous children's learning. My research explores what happens to children's learning when the rich intellectual heritage that has evolved across generations is main-

Downloaded from <http://karger.com/nd/article-pdf/58/2/97/2898091/000381652.pdf> by guest on 13 April 2024

tained rather than replaced by Western ways of teaching [e.g., Tsethlikai, 2010, 2011; Tsethlikai & Rogoff, 2013]. As cited by Allen and Lalonde, my work has found that American Indian children who are actively culturally engaged are more likely to learn through watching others and listening in on activities even when they are not directly involved [Tsethlikai & Rogoff, 2013]. Rogoff and colleagues have documented similar results, finding that Guatemalan, Mayan, and Mexican heritage children who engage in a constellation of traditional indigenous practices were more likely to learn from observing others, listening in, and using nonverbal forms of communication [e.g., Correa-Chávez & Rogoff, 2009; López, Correa-Chávez, Rogoff, & Gutiérrez, 2010; Silva, Correa-Chávez, & Rogoff, 2010]. This research suggests that there is something special about historically grounded cultural practices that have evolved across generations. Specifically, these practices very powerfully shape how children learn despite drastic changes in the sociocultural norms for some of these children and in the daily educational experiences of all of the children.

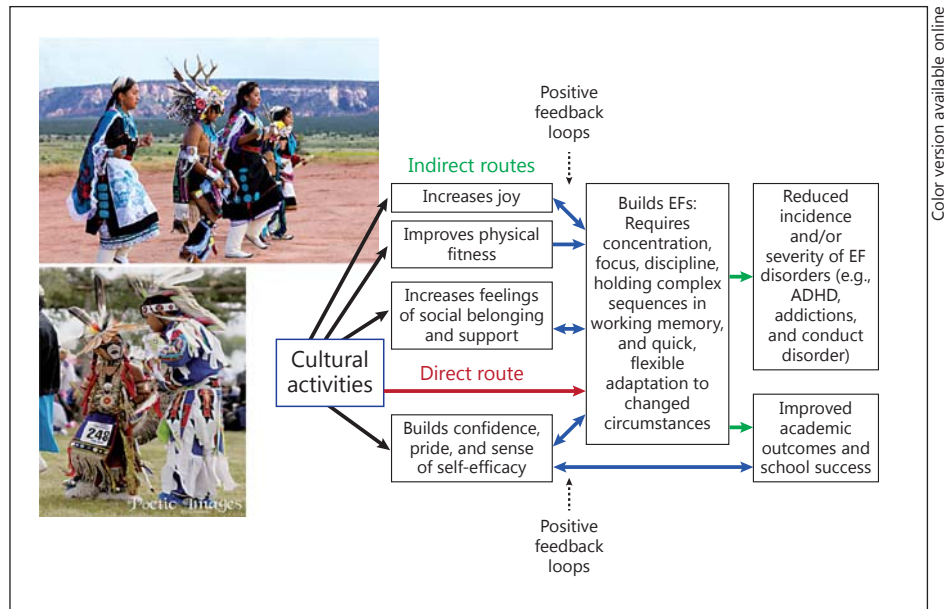
The Cultural Patterning of Cognitive Development

In Wertsch's [1979/2008] classic paper addressing the central themes of Vygotsky's theory, he stated that researchers have not paid enough attention to the role social interaction plays in the development of higher mental functions and the particular role speech or speaking play in the development of self-regulatory skills. According to Vygotsky,

... higher mental functions appear first on the "interpsychological" (i.e., social) plane and only later on the "intrapsychological" (i.e., individual) plane. "Any higher mental function was external because it was social at some point before becoming an internal, truly mental function." [as translated by Wertsch, 1979/2008, p. 67]

Moreover, Wertsch [1979/2008] claimed that "... any attempt to understand specific issues in his (Vygotsky's) theoretical framework is bound to be misguided if this issue is overlooked" (p. 67). The research presented by Allen and Lalonde clearly speaks to Vygotsky's emphasis on the social activity of speech or speaking in promoting the development of self-regulation. One important function of storytelling in indigenous communities is that of "other-regulation," as all stories contain a lesson for the listener to learn. Allen and Lalonde explored how cultural paterings in oral traditions lend themselves to the ways that meanings are shared. In particular, they noted the use of pattern numbers, verses of speech from the characters in the story, and the use of recurring statements as form devices that likely impacted how listeners interpreted and remembered the story. Specifically, the grouping of lines into sequences of three and five allowed the narrator to emphasize the most meaningful parts of the story, and this patterning and emphasis was maintained in the children's retellings of the story. According to Allen and Lalonde, consistent with Hymes's [1981, 2003] form-meaning covariation, the 3/5 verses and repetitive phrasing contributed to the meaning of the story by using the form to build tension and share the lesson of the story in a particularly memorable way. This patterning likely evolved over generations as narrators learned that certain ways of telling had more impact than others.

Importantly, the children's retellings of the story revealed that they used the same organization and structuring as the cultural educator, thereby demonstrating



Color version available online

Downloaded from <http://karger.com/nd/article-pdf/58/2/97/2898091/000381652.pdf> by guest on 13 April 2024

Fig. 2. The cultural patterning of cognitive development. ADHD = Attention deficit hyperactivity disorder; EF = executive function. Adapted from Diamond [2012].

that they understood that the purpose of using verses of speech and recurring statements was to emphasize the lesson contained in the story. More importantly, many of the children were able not only to state what the lesson was but also were able to apply the meaning found in the story to the contexts of their own lives. The educator's use of speech patterning to emphasize the lesson contained in the story helped the children understand the meaning and internalize the moral of the story. Thus speech and patterning were the tools that moved the lesson from the interpsychological plane to the intrapsychological plane.

How else might forms and functions that are historically grounded in specific cultural contexts contribute to children's self-regulatory skills? In my work, I have started using Diamond's [2012] model which she developed as a way to illustrate how activities and programs might directly and indirectly impact the development of executive functions. According to Diamond, Barnett, Thomas, and Munro [2007], the particular functions necessary for optimal self-regulation and success in life and school are: (a) inhibitory control, the ability to resist distractions and selectively attend to relevant information; (b) working memory, the ability to hold information in mind and work with it; and (c) mental flexibility, the ability to shift attention or adjust to change. In my adaptation (see fig. 2), I hypothesize that active engagement in cultural practices may work much the same way. Traditional child-rearing practices of American Indians likely fostered the development of executive functions as many cultural activities involve physical exertion which supports executive function development (e.g., traditional dancing, running, the planting of prayer sticks, or pilgrimages). Other traditional activities require children to learn complicated rituals and

ceremonies through participation and expect children to learn from listening to and observing elders; thus, these activities actively engage attentional control, working memory, and inhibitory skills. In addition, many traditional activities involve music, drumming for almost all tribes, singing as prayer, celebration, and entertainment. Moreover, these activities directly contribute to a sense of belonging to a community and increase feelings of social support.

I saw Diamond's model in practice while attending a dance in Laguna Pueblo. Dances are held all day long to pray for the health and prosperity of the people, with the same people dancing from dawn to dusk. During the last dance of the evening, a young dancer, about eight or nine years old, who was wearing a traditional headdress of cedar branches over his face and was clearly beyond exhausted, started to stumble around and appeared to be looking for a way to get out of the dance circle. In response, the older dancers that were in close range moved their bodies around him in a supportive circle. In encouraging him to continue the dance, no words were needed, just the guiding support of bodies circling around him, helping him to engage his self-regulatory skills and persevere to complete the dance, which he did.

Preserving Indigenous Ways of Knowing through Culturally Based Narrative Instruction

The most compelling finding presented by Allen and Lalonde was that, even though the students were not of the same culture as the educator, they maintained a patterned use of speech in their retellings to achieve the rhetorical effects employed by the educator. Thus, regardless of differences in cultural background, the patterned use of speech conveyed meaningful benefits to the students. This finding broadens the scope of work, demonstrating enhanced cognitive benefits of culturally congruent learning contexts for indigenous children by demonstrating that culturally based methods of instruction convey cognitive benefits for all children regardless of cultural connection.

It is important to acknowledge a caution issued by Romero-Little [2006] that we must be mindful of how we adapt historically grounded practices for inclusion in Western practices, admonishing that, when we change how we teach indigenous languages by translating them into written form or English, we may be losing the "essence" of the language itself. Indeed, Allen and Lalonde speculated that the translation of the traditional Kwak'wala story into English resulted in a 3/5 pattern rather than the expected 2/4 pattern found in the analysis of earlier Kwakwaka'wakw texts.

With our reliance on the written word, it seems impossible to teach strictly through oral means. Yet Allen and Lalonde remind us of the importance of maintaining traditional storytelling for children's learning by demonstrating that these methods convey meaning in ways that written narratives cannot. Indeed, research suggests that teaching oral expression skills could improve academic outcomes for all children since oral expression skills are moderately related to reading comprehension and written expression skills [Berninger, Abbott, Jones, Wolf, Gould, Anderson-Youngstrom, & Apel, 2006]. Moreover, for children from cultural groups with a preference for oral expression over written expression, including teaching curriculums grounded in the cultural patterning found in indigenous and African cultures throughout the world may help improve academic outcomes by promoting reading comprehension skills [Gardner-Neblett, Pungello, & Iruka, 2012].

References

- Berninger, V.W., Abbott, R.D., Jones, J., Wolf, B.J., Gould, L., Anderson-Youngstrom, M., & Apel, K. (2006). Early development of language by hand: composing, reading, listening, and speaking connections; three letter-writing modes; and fast mapping in spelling. *Developmental Neuropsychology*, 29, 61–92.
- Correa-Chávez, M., & Rogoff, B. (2009). Children's attention to interactions directed to others: Guatemalan Mayan and European American patterns. *Developmental Psychology*, 45, 630–641.
- Diamond, A. (2012). Activities and programs that improve children's executive functions. *Current Directions in Psychological Science*, 21, 335–341.
- Diamond, A., Barnett, W., Thomas, J., & Munro, S. (2007). Preschool program improves cognitive control. *Science*, 318, 1387–1388.
- Gardner-Neblett, N., Pungello, E.P., & Iruka, I.U. (2012). Oral narrative skills: Implications for the reading development of African American children. *Child Development Perspectives*, 6, 218–224.
- Hymes, D. (1981). *In vain I tried to tell you?': Essays in Native American ethnopoetics*. Philadelphia, PA: University of Pennsylvania Press.
- Hymes, D. (2003). *Now I only know so far: Essays in ethnopoetics*. Lincoln, NE: University of Nebraska Press.
- López, A., Correa-Chávez, M., Rogoff, B., & Gutiérrez, K. (2010). Attention to instruction directed to another by U.S. Mexican-heritage children of varying cultural backgrounds. *Developmental Psychology*, 46, 593–601.
- Romero-Little, M. (2006). Honoring our own: Rethinking indigenous languages and literacy. *Anthropology & Education Quarterly*, 37, 399–402.
- Saxe, G.B. (2012). *Cultural development of mathematical ideas: Papua New Guinea studies*. New York, NY: Cambridge University Press.
- Silva, K.G., Correa-Chávez, M., & Rogoff, B. (2010). Mexican-heritage children's attention and learning from interactions directed to others. *Child Development*, 81, 898–912.
- Thelen, E., & Bates, E. (2003). Connectionism and dynamic systems: Are they really different? *Developmental Science*, 6, 378–391.
- Tsethlikai, M. (2010). The influence of a friend's perspective on American Indian children's recall of previously misconstrued events. *Developmental Psychology*, 46, 1481–1496.
- Tsethlikai, M. (2011). An exploratory analysis of American Indian children's cultural engagement, fluid cognitive skills, and standardized verbal IQ scores. *Developmental Psychology*, 47, 192–202.
- Tsethlikai, M., & Rogoff, B. (2013). Involvement in traditional cultural practices and American Indian children's incidental recall of a folktale. *Developmental Psychology*, 49, 568–578.
- Vygotsky, L. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Wertsch, J.V. (2008). From social interaction to higher psychological processes: A clarification and application of Vygotsky's theory. *Human Development*, 51, 66–79. (Original work published in 1979.)
- Wertsch, J.V., & Tulviste, P. (1992). L. S. Vygotsky and contemporary developmental psychology. *Developmental Psychology*, 28, 548–557.