Bruce Fuller [2009] warns developmental psychologists against advancing hunches rather than speaking from evidence in the debate on universal preschool. I agree with him that we need to be responsible when we describe the evidence. Cherry-picking studies, making misleading statements, or leaving out important information to support our point of view is unprofessional and undermines our credibility. But I would like to remind him that those who live in glass houses should be wary of throwing stones.

Fuller fails to practice what he preaches, even in this brief piece. For example, he claims that ‘…discernible gains largely fade out by the end of elementary school’ (p. 164). This is an excellent case of cherry picking, as many studies have shown long-term effects of quality preschool which generate considerable cost savings. He points out that four fifths of children from upper middle-class families already attend preschool, but fails to point out that ‘upper middle-class families’ represent a relatively small proportion of America’s families, that working-class families have especially poor access to quality preschool, and many middle-class families struggle to pay for preschool, whatever the quality. He comments that ‘Proponents also have claimed that programs situated in public schools would be more effective than those in nonprofit organizations, where most 4-year-olds now attend preschool’ (p. 164). Perhaps some proponents have claimed this, but certainly not every proponent, maybe not even most. Putting aside the question of the value of public schools versus nonprofit organizations, his overgeneralization appears to be an effort to discredit a large undefined group that holds a position different from his own rather than to provide information.
Bruce Fuller is not the only social scientist who has played fast and loose with the evidence to promote a political position. And the point he makes in this piece is well taken, even if he violates it himself. If we are honest, most of us who take a position either for or against universal preschool base our position on a combination of our interpretation of the evidence and our beliefs, for example, about what is just and fair. My own support for universal preschool is based substantially on the evidence for long-term positive effects of preschool. But it is also based on the views that programs targeted at economically disadvantaged children are vulnerable, and that support from middle-class families is necessary to make what I believe should be a universal good available to all children. Fuller reminds us, through his counsel and his own conduct, that while we are social scientists we are also political beings and we need to be aware of how easily these two identities can be confused

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Language Undertheorized: Conceptual Metaphors and Conceptual Change

We read Amin’s [2009] paper with interest especially as he discussed his ideas relative to the spectrum of dominant frameworks in conceptual change research. We will not comment here on the various frameworks and how Amin’s approach stands relative to them, but we will share some puzzlements over the place and role of language in conceptual change. On the one hand, we find his analysis of both lay and scientific language in terms of the metaphors used to define and understand abstract concepts helpful in that it reveals how everyday and scientific language share similarities, not only differences that are detrimental to conceptual understanding. On the other hand, we do not find in his analysis attention to the framing context of language and to its social, collective nature. We believe that both these issues are critical when we think about classrooms and students’ conceptual change.

When we use a Bakhtinian [1981] view of language, we need to see language as more than a system of signs. Language is not a neutral medium that can be simply appropriated by a speaker, but something that comes to us populated with the intentions of others. Every word carries with it flavors from the contexts in which it has been used, and it reflects the context within which it is currently used. Words are living entities that carry information, but also opinions, beliefs, assertions, emotions, and intentions of others that we partially accept and modify. Thus, language that scientists use among themselves, or to communicate ideas with other ‘insiders’ of their practice, their community, may carry different meanings, being populated with different intentions, assertions, and so forth, even though the words used and their references to experiences are the same or similar to those used in everyday life. Language use is always dialogic. Thus, the knowledge we gain from pursuing empirical studies similar to the one that Amin [2009] conducted (i.e., examining a random sample of disconnected sentences in lay language and comparing them to statements in a scientific text) is limited in terms of fostering our understanding of conceptual change in dialogic contexts, such as science labs or science classrooms.
According to Bakhtin [1981], every instance of language use has centrifugal and centripetal forces. Centrifugal forces lead to alterity and heteroglossia, whereas centripetal forces to intersubjectivity and stratification. Any word that we speak is already ‘half someone else’s’ (p. 293). It becomes our own only when we populate it with our own intention. Furthermore, all utterances are situated within the framing context of their dialogic interactions with other utterances. Using a CHAT (cultural historical activity theory) framework [Cole & Engeström, 1993], this context is shaped by the goals of an activity, the artifacts used, the norms of the community within which the activity takes place, the people, and the ways the people parcel out the tasks to be done. The past, present, and future that a group shares shape how language is used and determine meanings to be developed.

Furthermore, Vygotsky’s [1934/1987] construct of word meaning may be important to consider, since word meaning can be viewed ‘not only as a unity of thinking and speech, but as a unity of generalization and social interaction, a unity of thinking and communication’ (p. 49). Words have meaning potentials that can be realized in living speech [Wertsch, 1985]. ‘The actual meaning of the word is inconstant. In one operation the word emerges with one meaning; in another, another is acquired’ [Vygotsky, 1934/1987, p. 276]. Thus, as students and teacher engage with each other, with materials, and with ideas in classroom discourse, conceptual metaphors realized in language (or other semiotic systems, namely pictures, diagrams, dramatic enactments, gestures, etc.) emerge, evolve, flourish, dominate, and are ignored or lost based on goals, rules, genres, and people involved in the activity. Other sociocultural constructs such as Bourdieu’s [1984] cultural capital and patterns of privileging are important to consider, too, as we examine which conceptual metaphors thrive and which die in a community of learners or practitioners. This is one of the reasons why conceptual change is so elusive at times. Although conceptual metaphors enable the mapping between propositional knowledge structures, the possible different forms and functions that conceptual metaphors could have during interactions among learners and more knowledgeable discourse participants necessitate that we further theorize about this. As Lemke [1995] noted, meaning is made by human social practices. Thus, we need to consider meaning making, and, therefore, concept development and conceptual change, as produced socially and as functioning socially.
Lastly, one of the important ideas that Vygotsky has taught us is that scientific concepts are formed on the basis of organized, systematic, and hierarchical thinking and as relations with other concepts solidify. Scientific concepts develop their meanings from a system of concepts, in contrast to spontaneous concepts that are linked to particular contexts and lack membership in a system. Thus, although experiential intuitions and ties to particular experiences are important aspects of conceptual metaphors as Amin [2009] noted, we may need to really put the emphasis on language and its mediating role in order to achieve the systemic nature of scientific concepts. The experiential notions of part-whole, containment, and force may need to be synthesized, organized, and linked via various semiotic tools that are experienced in, and framed by, particular social contexts, in order to enable conceptual metaphors to strengthen scientific concept development.

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References