Number to the Core: The Development of Number Concepts and Skills in Young Children: A Partial Theoretical Account and Computational Model

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Number concepts, number words, and number-related skills, such as counting and small number addition are learned very early in most cultures. Most children in the United States learn to count small numbers by the time they can talk, and by the time they are in kindergarten, they can add small numbers. There are, however, some common number-related difficulties that some children experience. In early years it may be difficult to tell these difficulties apart from simply not yet having mastered the complexities of counting and adding, but sometimes difficulties in number-related skills persist into later years, and are given labels like "dyscalculia" there

The detailed substructure of

There is a very important role of subitizing here. In the 3+4 counting on algorithm the mystery of how you know to stop could be satisfied by having some sort of subitizing-based recognizer for 4 which stops the counting-on algorithm when the recognizer triggers.

Number concept appears around the same time as the child's primary language or languages are being learned

There needs to be some sort of cue that indicates the strategy type ... or maybe COUNT is just one strategy included in ... Yes! Count up by 1 should be a strategy that gets repressed!

Hypothesis about weighted (10000, 110000, etc) to random-n (3) to localized (=symbolic) representation in rapidifying learning

# Maybe should change PERR on every, say, pbs round (approx.: age) to

# simulate improvment in ability to count correctly with age.

V3/sumstats/3676848982-dcsum reports large scanning study in Myra's code demonstrating the differences in difficulties of learning the simple relationships between 7->H->5 relationship.

There is this very interesting and critical issue regarding the output representation. If you have a localized representation (1=1000, 3=0010, etc) then you can give + or - pushes when you get the wrong/right answer, but if you have a random dictionary-absed number representation, it's not clear how right and wrong work. In fact, the whole feedback thing is probably actually wrong. I doubt that remote (even by a few seconds) feedback is useful, but rather experience is the teacher in-and-of itself