

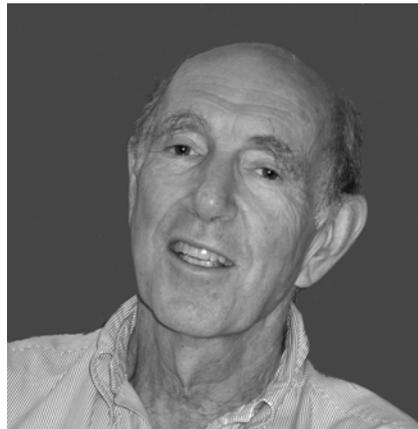
## Encounter

### ***A Conversation with Mike Cole on Culture, Experience, and John Dewey***

#### **An Interview by Walter P. Oldendorf**

*Were I to write (or rewrite) Experience and Nature today I would entitle the book Culture and Nature and the treatment of specific subject-matters would be correspondingly modified. I would abandon the term “experience” because of my growing realization that the historical obstacles which prevented understanding of my use of “experience” are, for all practical purposes, insurmountable. I would substitute the term “culture” because with its meanings as now firmly established it can fully and freely carry my philosophy of experience.*

—John Dewey, 1951. (LW 1: 361)



My introduction to Mike Cole’s work commenced upon my arrival at Appalachian State University four years ago. It was my turn to follow my wife, who had taken an associate professorship at ASU, and I was offered either the position of goat herder or Coordinator of the Fifth Dimension. My previous experience with being butted from the behind by ill-smelling creatures notwithstanding, I chose 5th D. Much to my delight, 5th D combined preservice teacher mentors, children in after school, technology, informal learning, a great deal of fun, and no testing whatsoever. In this era of high stakes test-driven instruction 5th D seems miraculous indeed.

I soon discovered that the intellectual founder of the Fifth Dimension was Mike Cole. Mike's story of the role of experience in his intellectual development from behavioral psychologist to a major figure in cultural psychology comprises a good deal of the following interview. The interview took place in Mike's office at the University of California—San Diego, where he is University Professor.

*WO: Mike, I would like to begin our conversation by revisiting the notion of experience. It seems to me to be the most important concept in Dewey, a rich field as far back as The Child and the Curriculum. We have the child and content matter, and the synthesis of the two is much more than just child and subject matter; it unfolds into the notion of experience for Dewey. I thought maybe we could talk about experiences you have had that shaped your thought.*

MC: I hardly know where to start. As a scholar I learned about Dewey from the Russians. That's really odd you know.

When I went to graduate school, I was a dyed-in-the-wool scientific psychologist, I thought.

I got interested in technology, and my first psychology teacher was a woman named Celeste McCullough who is famous for perceptual effect. She taught as a graduate student at Columbia. She was sort of a Skinnerian when she wasn't doing research on perception, so I had a sort of Skinnerian introduction to psychology. I went from Columbia and I ended up at UCLA, where I studied with people who are themselves behaviorist and mathematical psychologists. I went to Indiana University to work with Bill Estes, who was a mathematical psychologist and a student of Skinner's. A long time later I understood that Skinner had actually read Dewey very carefully. There was a very interesting relationship between Dewey and Skinner.

*WO: Skinner was not to be underestimated.*

MC: All sorts of people underestimate Skinner, in my opinion. You can disagree with him in all the situations you want, but I think there are certain Deweyan principles you can find in Skinner. But I had never read Dewey at that time and I never had had a class in developmental psychology.

Then I went off to Russia to study with Alexander Luria, who was doing classical conditioning of word meaning. I thought it would be interesting to study language with these same scientific methods.

I came back from Russia with a degree and almost right away I went to Africa to work on a mathematics project. We studied why African children having difficulty learning mathematics, which resulted in a book that I wrote with John Gay called *The New Mathematics and an Old Culture*. Children having trouble learning mathematics! I had a degree in mathematical psychology, so you'd think I should know something about how to teach kids to learn mathematics. But mathematical psychology didn't have anything to do with teaching anybody

about mathematics. It had to do with using certain forms of mathematics to model people's thought processes in heavily constrained situations—three buttons that lit up unpredictably, that kind of thing.

I ended up in Liberia with no anthropology background to help me understand my situation. But when I talked with the rice farmers, they seemed like perfectly normal people. They attended schools, a rote kind of education to be sure. And they had a lot of trouble with mathematics. Others had explained that trouble as a result of the rote learning, but I tried to understand it in terms of their everyday activities with numbers. My idea was that if you wanted to understand why they had trouble with mathematics in school, you had to figure out what they did with mathematics in their everyday lives, and then figure out the relationship of those activities to school.

So I gave them very standard kinds of tests. I like to do jigsaw puzzles and I'd get jigsaw puzzles and there would be kids around. I'd say here, come on. They could not do jigsaw puzzles at all. I mean the most obvious piece I would look at, they just couldn't see at all. I played other little number games with them and I just talked with people about all the disabilities these kids had.

I could see what they were talking about in the sense of disabilities. That was the kind of talk that went on, about being culturally disadvantaged. When I used very standard psychological-type measures, these people were simply classified as mentally retarded. No question about it, they are mentally retarded.

But then I'd go spend time with them—either I would go out and visit their farms, I'd go sit at the store, and I liked to watch the transactions because people would bring in their bags of rice to sell and then they would buy rice in tin cans of a certain size.

I thought, these people grow rice and there is a part of the year when there is not enough food and they have to save the rice seed for the next year. I was sure there was mathematics going on there. Sure enough, we did a study of the local accounting system, and they had ways of counting. They used a cup, a standard pint can or something. I found out that when the guy at the store bought the rice, he had one of these cans but he took a hammer and he pounded out the bottom of the can so it was sort of round, but when he sold it back to them it was flat. So he was charging them more when they were needy. Even so, these people had to have a pretty good sense of how much rice was in there and they were doing these monetary transactions. Sure enough, so many bundles of rice will go into so many bags of rice, which makes so many cups of rice.

We started out doing what we called backwards experiments, where we took their rice problems and gave them to Yale undergraduates and people living in the local community. It made the Yalies look really stupid, which I liked a lot because I was teaching them and they were very sure of themselves. So that was really where my idea began. If people are having extraordinary difficulty in school but they don't seem to be having extraordinary difficulty in their everyday lives, and moreover, they are smart enough to talk you out of money you don't

want to give them in various transactions, so they are clearly not mentally retarded. What psychological theory could explain that in my training at the time? None.

There was no theory of intellectual development and schooling that started with the organization of people's everyday lives, and that came together for me with the Russian idea of activity. I encountered Alexander Luria, who was doing stuff with people who had brain injuries. But he had done research in Central Asia, so when I went to Africa, we got to corresponding about my work.

*WO: Who are the psychologists in other parts of the world to whom the Soviets might have turned to help develop what they called cultural-historical psychology?*

MC: Janet in France, John Dewey in the United States, and various Germans. They divided up the labor. Leontiev specialized in the French, Vygotsky and Luria on the Germans and Americans. Vygotsky and Luria worked at the Krupskaya Institute of Education—Krupskaya was Lenin's wife and had invited Dewey through Blonsky, who was a prominent educational psychologist.

So, it was clear that there was sympathy there, and I attribute it to a common interest in starting with people's experience, their lived experience; I like the term "activity" and the idea of everyday activities. Rice farming is a kind of activity, going to the market is a kind of activity, going to school is a kind of activity. All these things are activities; but the Russians were thinking of activity in this highly philosophical German way that I didn't understand at all. I was thinking of it in a kind of commonsense way, and that is when I started to read Dewey. I was really thinking of it more in terms of what people do and what happens in the transactions between them and their local environments. So for me that was the starting point of encountering Dewey. I read Larry Hickman's book on Dewey's pragmatic technology, which focuses on tool mediation, so for me that's perfect. There is a Vygotsky-Dewey connection through tool mediation, and I think in a lot of ways I came to Dewey thinking about that.

*WO: Vygotsky reads a lot like Dewey. Is there a reason for that?*

MC: Right. The Russians would write the introductions, they would read Kohler and Dewey and James. Luria said James's *Varieties of Religious Experience* was the most important book that he read as a young man. For him that was very important.

I started trying to develop a way of thinking about human development. It wasn't quite the Russian way of thinking about it. For them activity was an abstract concept. It wasn't for me. Activity is like sitting here having a conversation with you. It's what people actually do. So now I became very taken by American anthropologists. Their tradition was to find what people do and how they understand what it is that they do. Russians don't have that tradition.

I started out by using the term “context,” and the first book that I professionally wrote where I was beginning to think about this was called *The Cultural Context of Learning and Thinking*.

I was influenced in reading Dewey’s logic and Dewey’s definition of situation. If you look at Dewey’s definition of situation, situation isn’t like a given thing that’s surrounding somebody. It’s a transaction that has these elements that enter into it.

For a long time what I was very much involved in this whole problem of “are poor people stupid” or “are black people stupid.” I don’t believe they are, and from my experience in Africa, I’ve learned certain forms of experimentation are absurd. You can make people look stupid by taking the lived experience of some people and inflicting it on some other people, who don’t know how the hell to interpret it.

So, there’s something wrong with the whole way in which experimental psychology is structured. C. Wright Mills’s term “abstracted empiricism” is an extremely good concept. I think he nailed it. So how do you get empiricism where you have a different notion of abstraction? Abstraction is empty, and abstraction helps you to rise to the concrete, which embodies the abstraction. That’s a really useful abstraction. So I spent a lot of time doing experiments. I got into completely disbelieving and did a lot of comparisons of school experience and the effect of schooling.

A French journalist said to me once, “Isn’t it obvious, you take these people spending fifteen years in school doing all these odd, hard-to-remember lists of words and you do all these calculations. You can often do an experiment and the experiment is often like what they do in school and you compare that with people who have been out farming for the same period of time, and the people who have been in school do better than the people who have been on the farm.” It all has to do with the way in which we constrain people in school to learn how to process information in particular kinds of ways.

That brought me to the issue of ecological validity. I figure that the logic of doing school/non-school comparisons had to be that I had to be able to identify common psychological cognitive tasks that people who went to school and people who didn’t go to school experience equally often. When they encountered this common task, they did it differently, and you could attribute that difference to either being out on the farm or being in school. That would tell you what the cognitive consequences of going to school were. Just giving school-like tasks never was going to be able to tell you that.

I spent a whole lot of time trying to figure out how to identify a cognitive task in everyday life. For example, some cognitive psychologist comes along and tells these kids, “I want you to remember the following twenty words. You can’t use a pencil and paper and I am going to read them to you one at a time and the words have no obvious relationship to each other at all.” They then have to create these structures in their heads so they can repeat the words back to you. Lo

and behold, kids who have had to cram for exams in school are better in doing that than people who haven't.

*WO: What intrigues me at this point is that you came to this task from a positivist background.*

MC: Yes, and I believed in it strongly.

*WO: Then you had some kind of a transformative experience there in Liberia, which rearranged your thinking. Very few people who went through that positivist kind of education have had such a transformation.*

MC: I went back to try to figure out how this split arose in the first place. Why can't psychologists include culture as a real constituent of human nature? Why is it always this very superficial thing? They will call it the glove that fits on the hand. In reality, the hand determines the shape of the glove and I thought, and that was the metaphor for culture. Cultural psychology asks that question, Why can't psychologists keep culture in mind, and if they want to keep culture in mind, how can they still be psychologists?

Why the Russians were so interesting to me is that they wanted to put those two damn things back together. I didn't agree with their way of thinking about culture; even Luria in his central Asian work. He did his work using interviews in a kind of Western-style developmental tests. If you read the Russians early work, there is this culturally developed mind because it's mediated by more developed culture, and so there is also kind of a primitive mind thing even though they denied it. That argument is going on today with evolutionary psychology. It comes back over and over again in different forms.

Dewey was extremely important because he was saying why not give the kind of authentic experience with which they can hook up the abstractions that you're trying to talk about. Now, he also at times would do this: first with these very little kids you start with this archaic human stuff and then you'll have them build Egyptian pyramids, and so you had a little bit of "ontogeny recapitulates phylogeny," along the lines of what you can find in Dewey.

The question is what is there to it. I don't think we really know. So I'm writing a chapter which tries to put all this stuff together. So I reviewed all the recent stuff on humanization, all the recent stuff on primatology, and then I come to ontogeny, up against the background of what everybody says about evolution and chimpanzees and a common ancestor. It has made me rethink quite a lot of things that I am interested in. I decided that if this theory is worth anything and the same thing's true with Dewey, you ought to be able to go out and show that if you create the conditions where the theoretical principles apply, then you ought to have certain kinds of consequences for people who engage in the activity that you're talking about. You should be able to apply the theory and the applications not separately from the theorizing. The application is the test of the theory.

Now someone will experiment but the actual ability to apply it in real human life is not just the application, it's the test. So, the big thing in experiments is that they simplify the situation down to where they get just exactly the contrast they want in order to be able to show their theory. What if you can't create those conditions unless you spend a million dollars every time you do it? I say that you design experiments, but they always lead back to that paradox.

Compare what we're doing with what Ann Brown did; Ann Brown read Dewey carefully. She and Joe Campione were directly inspired to theorize by a combination of Dewey and Vygotsky. She was a good experimental psychologist, had the same history that I did of experimenting with rats, then with retarded kids on learning multiple lists of learning to learn things and got no generalization at all and decided this was the wrong way to do things. They developed the idea of the community of learners and got a huge amount of attention, because they did it within the structure of the school so that they could actually do pre- and post-tests.

Controlled tests of designs like communities of learners are impossible. Communities of learners showed great gains as long as the experiment was conducted in the same school with the same kids in Oakland. But 20 miles away across the Bay it fell flat on its face. The results don't generalize.

The Fifth Dimension, an outgrowth of our work in cultural psychology, is a part of after-school programs at several sites in the United States and Europe. The guiding concepts of 5th D are university-community cooperation in mentoring children, the use of computer technology to mediate the mentor-child relationship, and an atmosphere of informal learning. There is a starter kit for new 5th D sites, but each site develops in its own unique way, so that generalizations through experiments aren't meaningful here, either.

*WO: Why was it that community of learners didn't generalize, why wasn't it exportable?*

MC: Because with the community of learners they had a recipe for how you did it. With Fifth Dimension, we have a starter kit, "The Incomplete Guide to the Fifth Dimension." Whenever anybody comes here to see a Fifth Dimension, I say until you've seen three Fifth Dimensions, you haven't seen one. Every one of these things is going to be different, but they are going to have certain properties that they share and that are the big challenge. Everybody says name the three properties, but you know as soon as you name the three properties they are going to turn it into a list, and as soon as they turn it into a list they say I have done real science. I know how to make things look like science.

The real phenomenon, I think, is an important finding, where I compared the noise levels in the Fifth Dimension and in the environment that the Fifth Dimension is in. One Fifth Dimension we worked with was right next to the Boys Club. They had teams there, and they had jukeboxes, and what have you,

but you came into the Fifth Dimension and it was fairly quiet. Kids are going around doing all the things they're doing, but it's quiet.

Go from there to the Fifth Dimension that meets in a library. The first thing you notice is how quiet it is. You have to remind the kids that get excited that they have to be quiet, that it's a library. So, you have this double relationship. In the club the Fifth Dimension is quieter than its environment. In the library the Fifth Dimension is noisier than its environment. In the club there is more education going on in the Fifth Dimension than there is in its environment. In the library there is more play going on than there is in its environment. So the Fifth Dimension was organized to have this ongoing conflict between play and education. You don't know whether you are playing or studying. You have no idea. You know you are having a good time, so you don't believe that it is school, but people come in and look at the kids who are doing it and say, "My God, look at what these kids are doing. This is just the kind of thing we are trying to teach."

If you're going to sustain the Fifth Dimension, you've got to sustain this quality, but it's always in relation to its context and now you get to the idea of context. Context is weaving together, and that takes you back to Dewey's idea of situation, I think. There is something about real life that has this quality; like in standard psychology right now, the big deal is to try to show the relation between cognition and emotion—as if cognition and emotion were separate and they have a journal called *Cognition and Emotion* where they are all working on the relationship between these two separate things.

The whole issue then becomes a design environment. We have the right quality that emerges. Where there is enough, then it is educationally and developmentally positive for the children, and the kids want to come. Again it goes back to Luria saying the only way to know what other people are thinking is to get highly coordinated with them in a volunteer activity. Then every once in a while, there is a little discoordination, and when that happens, if it's against the background of coordination, you know damn well why you were disordinated, and then you can have some idea exactly what that person is thinking at that moment. But otherwise you just don't know.

*WO: Unfold that a little bit in terms of how to know exactly what a person is thinking if there is a discoordination.*

*MC: Luria had done a number of experiments like this. Five people are suspected of doing a crime and in this crime there is somebody who dropped the handkerchief. So, Luria would bring in five people who didn't know anything about what was going on, but he knew 'handkerchief' was a critical word. He started out with a tone. Every time I sound this tone, he said, squeeze this rubber ball and hold your other hand steady. He'd do that until they were doing it completely every time. Then he would start to throw in words and he'd throw in words like desk, door, and then he threw in handkerchief; if handkerchief was the only*

word that discoordinated that nicely coordinated thing and only did it for one of those five people, he knew damn well that was the person who did it because why else would handkerchief be just like random sort of thing for everybody else and not for the person who was there.

*WO: How does this matter in a school context?*

MC: For me, take kids who aren't reading well. There are a lot of reasons why they don't read well. We have theories, but you get kids who have been failing to read for four or five years in school. We'd get the kids doing a public thing together. We would hand out cards and the cards would have things that the kids did. We had a whole game that we played. So for some kids, you had a card that said "point to a word that's hard to say." They couldn't even decode it. Then we say, "Point to a word that's hard to say what it means." Different kids discoordinate with the game in different places.

There are some kids who know how to decode but when you ask them about the meaning of something, they have lost track because they have done this phonics first kind of thing. They get lost in the phonics. People call it word barking. So, they read things like, "I see Spot, see Spot run," you hear it that way and that is very standard. We get kids like that. We had other kids who could read in that sense but they completely lose anything about a main idea. They lose the context. This is actually a case of a real severe learning disability of a completely different kind.

*WO: So this is a school-induced learning disability?*

Mike: Well, I am not sure in this case. This could be something that was fetal alcohol syndrome. It could be anything. One kid lost the context a lot and he was a Latino kid, so everybody attributed his difficulties to local racism. But we weren't racist, and we liked this kid a lot. We knew that he had a very serious problem keeping track of what was relevant in a particular context, and that was his difficulty, not just with reading. So there is an application of the principle: if you get really well coordinated and you have discoordination just at a certain time, you need to know what that certain time is.

Now the Fifth Dimension allows us to do that too because we get the kids, and they are interacting, and all of a sudden the kids have difficulty. I have an example of that where a kid is playing one of the computer games, and we discover the kid makes a wrong attribution of long A's and short A's or some letter combination. The child had the strong hypothesis that for every sound there is a unique letter. So, the fact that there isn't a one-to-one match in English was screwing up his reading. He had the wrong principle and he was applying it very consistently; but we were able to get deep enough in the game with the kid to discover the problem.

Once you discover the problem, you have a chance of helping the kid figure it out; you can arrange the contrast which will help the kid figure out. The

rules of English are not like Spanish. They don't have learning disabilities in Mexico of the same kind we have here because they have a regular orthography for the spoken language which we don't, because we have this hybrid language. So, that's an application; again for me the Fifth Dimension is great because it has to do with experience but in a different sense.

So, you know, I can do work in the laboratory here where we take the student undergraduate field notes and we do word searches on high technology databases in order to get the frequency of words like "read." We get the context so we can show the frequency with which things like that happen compared to when undergraduates say yes, but there's no Fifth Dimension. Well, it turns out there is only half as much reading going on. Now I can show that quantitatively, not just qualitatively. I never met a dichotomy when I didn't know the simplification. You know that joke about there are two kinds of people in the world, those who believe there are only two kinds of people in the world and the rest.

*WO: That's Republicans and Democrats.*

MC: At the moment, unfortunately, and that's also Christianity versus Islam right now. There are people who will prey on that and it's a very dangerous property, but every category in the language has this kind of stuff inside and outside. So, binaries are the most primitive way of doing things. It's a starting point for all kinds of things but it shouldn't be the ending point, we hope.

*WO: It's the most comfortable way though.*

MC: I think we are egocentric pre-operational kids. For me if psychology is going to be any really good psychology, then it should be able to help individual people. It shouldn't be just a psychology of statistical norm. Sure, the statistical norms are good for organizing what you do. If you are running the state government of California, you have got to distribute resources; you have got to make decisions. All that positivist apparatus is about something. But when you come down to an individual life and an individual human, you would like it to be able to help the individual. So when I go to the Fifth Dimension, it's not just that I am trying to use experience, but also play as a form of activity and learning as a form of activity coming together, and the affiliation between the undergraduates and the kids, which is very important.

Among other things, the Mellon Foundation is very interested in reform of higher education and the problem of large classes. It is just getting worse in California. So, again that's the idea of experience now in the large class thing. I gave students good experience last year when I taught a class. I had PowerPoint presentations I put on ahead of time. I gave them extra credit for coming to sections, for coming to office hours. They could get one point, up to 10 points for attending classes, up to one point if they asked a meaningful question.

A lot of them would come to listen because they didn't know what a meaningful question was. When a student would give me a little something, I would

say that's a meaningful question, write your name down. In a few weeks people started to get the idea. The real meaningful questions might turn up on your exam. So I think that again comes back. It kind of organizes experience if people are really involved. It's their goal; it's not just a certificate. It terrifies me when I have senior seminars and they first say what are you going to do, so I ask them to write down all the communication needs. Then I ask them to write down all the classes they have had in communication and which one interesting book they read or idea from the class. A lot of the students only write down the number of the class. That's all they turned in.

WO: *Not one interesting idea.*

MC: Nothing but the teacher's name, not a book, not the name of the class.

WO: *That's really amazing.*

MC: Well, because they are working twenty hours a week and they are just trying to get a certificate so they can go get a better job. I asked them to write a curriculum vitae to apply to either graduate school or a job or whatever you want to do next. They wrote "graduate in communication from UCSD in 2004." I said, "Is that the only thing that happened, there's nothing else that you want to put relative to your experience except that you graduated?" That's a whole new idea for them, and here they are getting ready to graduate. So now I teach this freshmen seminar where I have them do things, like they have to go see a play. A lot of them have never seen a play.

WO: *I have an interesting new colleague who is an artist and a qualitative researcher. Her dissertation has paintings in it, and so I am trying to understand what art as experience means.*

MC: I may just go back and read Dewey's *Art as Experience*, because for me art is so important. In the winter I get to teach this class called Language, Thought, and Media and I do oral language. I bring in one of my favorite Garrison Keillor monologues. I take them to see a play. I have a novel in theme in variation. I bring in Bach and Mozart. And poetry, each student has to read an academic theme about it and experience it. So if they are reading a novel, I have them read *Robinson Crusoe* and Ian Watt's article in his book on the rise of the novel, about *Robinson Crusoe*.

So, they can begin to see, and I actually have a category in my classes of academic bullshit. If you read this stuff, and it's no good to you when you're actually out there, then maybe it's bullshit. On the other hand, bullshit does help from time to time. So watch out for it because maybe you don't understand the connection. Just leave it as an open question that they have to decide, not that I have to decide.

WO: *I have a piece of music for you: the second and last movements of Beethoven's last sonata, opus 111, and if you haven't heard it, do so.*

MC: Now you have to go and read Milan Kundera's *The Book of Laughter and Forgetting*, because that's what I use for theme and variation.

Then, musically illiterate as I am, there's sixteen bars, four lines, I put that up on the board as a set of circles that only have a spatial relationship, you know time is this way and up down is up down frequency. When I put that on the board, I can turn the theme down and continue to hear it. They can hear the thing in the variation by mediating it through the space of representation on the board. How's that for musical?

WO: *That's beautiful, but as I begin to understand experience in Dewey's sense and art, I think opus 111 is a complete and unique experience in itself. But to add it into our conversation, you need to have the tools to understand. What you are trying to do is give people a choice.*

MC: That's where Vygotsky is so fantastic. That's why I read Larry Hickman on tool mediation and Dewey.

Let me tell you the following. Beethoven's *Eroica* symphony has those variations right in the middle of it. It's *Eroica* variations. It turns out the *Eroica* was not written as a symphony. It was written as a set of variations. You can buy the variations. Now, the big message in Kundera, is that a symphony is like a mythic traveling into the external world, the great adventure into the external world. Now, you listen to the *Eroica* variations and there it is, all the variations and I don't really care which one comes in which order. You listen to the variations inside the third movement of the *Eroica* symphony and it is completely transforming.

### **Selected Publications by Mike Cole**

Alexander Luria, *Cultural Psychology and the Resolution of the Crisis in Psychology*. <http://lhc.ucsd.edu/People/Localz/MCole/luria.html>. 1997.

*Cultural psychology: A Once and Future Discipline*. Cambridge: Harvard University Press, 1996.

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"Cultural Mechanisms of Cognitive Development." In E. Amsel and K. A. Renninger, eds., *Change and Development: Issues of Theory, Method, and Application*, 245–263. Mahwah: Erlbaum, 1997.

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"Luria, Alexander Romanovich." In R. A. Wilson and F. C. Keil, eds., *The MIT Encyclopedia of the Cognitive Sciences*, 494–495. Cambridge: MIT Press, 1999.

- Mediation, Creativity, and Consciousness. <http://earth.ucsd.edu:8080/ramgen/courses/econ113/cole111803.rm>.
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- Struggling with Complexity: The Handbook of Child Psychology at the Millennium. <http://lchc.ucsd.edu/People/Localz/MCole/review.html>.
- Sustaining Model Systems of Educational Activity: Designing for the Long Haul. Paper Presented at Symposium Honoring the Work of Ann Brown. 2001. <http://lchc.ucsd.edu/People/MCole/ann.html>.
- Vygotsky and Context: Where Did the Connection Come From and What Difference Does It Make? <http://communication.ucsd.edu/lchc/People/MCole/lsvcontext.htm>.
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