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**THE LABORATORY OF COMPARATIVE HUMAN COGNITION**

*University of California, San Diego*

Report of activities for the period 1985-1992

## TABLE OF CONTENTS

<b>Overview</b>	. . . . .	<b>. 1</b>
<b>Financial &amp; Supporting Data</b>	. . . . .	<b>. 5</b>
Expenditures	. . . . .	. 5
Support	. . . . .	. 6
Source	. . . . .	. 8
<b>Physical Facilities &amp; Space</b>	. . . . .	<b>. 10</b>
<b>Academic &amp; Public Service</b>	. . . . .	<b>. 12</b>
UCSD Faculty	. . . . .	. 12
Visitors, Seminars, Workshops Conferences	. . . . .	. 12
Publications	. . . . .	. 19
Graduate Students/Postdocs	. . . . .	. 24
Contributions to the Community	. . . . .	. 25
<b>Administration</b>	. . . . .	<b>. 26</b>
Directors 1985-1991	. . . . .	. 26
Advisory Committee Members	. . . . .	. 26

## OVERVIEW

### **The Laboratory of Comparative Human Cognition: Mission, Scope, and Relationships**

The Laboratory of Comparative Human Cognition (LCHC) moved from The Rockefeller University to UCSD in 1978. From its inception, the focus of LCHC's theoretical and empirical work has been on the role of culture in shaping human development and human nature.<sup>1</sup> As developed in a number of publications, members of LCHC have elaborated on the conception of culture as the species-specific medium of human existence constituted of systems of artifacts, a medium that has co-evolved with the biological constitution of the species and which acts as both a constraint on, and tool of, human action in the present.

Within psychology, the approach adopted by LCHC is variously referred to as cultural-historical psychology, cultural psychology, or a cultural context approach to psychology. It is distinguished from alternative approaches in psychology by its rejection of the idea that "the mind is in the brain," treating mind instead as a phenomenon distributed among people and their artifacts, including language and social institutions. This approach is also closely linked to social science movements referred to as ecological psychology and activity theory which ground their analyses in the everyday culturally organized activities of people as well as a variety of social science enterprises which fall within the general rubric of socio-cultural studies.

Because of its emphasis on culturally organized activities as the locus of its theorizing and empirical research, the staff of LCHC has always included scholars representing a variety of social science disciplines, including psychology, sociology, education, linguistics, philosophy, and anthropology (for which "culture" is a foundational concept). At present, for example, the core faculty of LCHC hold degrees in anthropology, education, artificial intelligence, and philosophy. It is also a multi-ethnic, multinational faculty consisting of two Anglo Americans, one Mexicana/Latina American, a Finn, and an Englishman.

In addition, the focus on the role of culture in constituting human nature also motivates the emphasis of LCHC personnel on comparative cognitive research. Our research is conducted at several levels of social aggregation and across a variety of comparative dimensions: cross-national and cross-cultural comparisons, comparisons across social class boundaries within a single ethnic community, studies of bilingualism and bi-dialectism, and comparisons between institutional settings have all served as topics for specific lines of research.

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<sup>1</sup>An extensive account of the history of the Laboratory up to 1984 is available upon request.

An especially important comparative dimension in the work of LCHC is temporal; a great deal of our research is developmental in the broadest sense of the term, i.e., it involves the study of transformations in person-context relationships over time. This is true whether the research involves a study of changes associated with ontogenetic variations, changes in the stages of expertise in a work group, changes resulting from specialized forms of instruction, or changes associated with the development of local idiocultures in relation to their institutional environments.

LCHC is organized as a loose confederation of independent researchers. Yet there is considerable synergy between the projects led by the six faculty members of the Laboratory.

- **Philip Agre** is focusing on technical discourse in a variety of domains: the design of artificial intelligence devices, elementary school mathematics lessons, and public hearings involving such issues as pollution controls.

- **Gerald Balzano** is conducting research on the design and implementation of new forms of educational activity for elementary school children using innovative hypercard methodologies.

- **Michael Cole's** research is concentrated in two, quite diverse areas. One project focuses on the creation of specially designed activity systems for children implanted in community institutions where children spend time after school. The other involves the introduction of Russian social scientists into international discourse using modern means to telecommunication and the study of cultural and institutional barriers to their full participation.

- **Adrian Cussins'** work is focused on a theory of representation which is being addressed in a project looking at the ways a team of elementary school teachers is constructing a complex cognitive object called "global education."

- **Yrjö Engeström**, currently director of the Laboratory, is applying principles derived from the Finnish school of developmental work research in three current projects. These projects are cross-national studies of the organization of lawyers' and judges work in courts of law, of doctors' and nurses' work in medical clinics, and of differently organized forms of team teaching and teamwork in schools.

- **Olga Vasquez** is engaged in a comparative study of children's language use and cognition in community, home, and school settings. Her focus is on Mexicano/Latino children and the special problems and potentials arising from their bilingualism and biculturalism. Together with Cole, Vasquez has helped to organize a national consortium of researchers interested in the design of special activity settings; their colleagues in this

enterprise include researchers at California State University (San Marcos), University of New Orleans, Erikson Institute of Early Childhood Education in Chicago, Michigan State University, Appalachian State University in North Carolina, and the Institute of Psychology in Moscow, Russia.

As diverse as they are, these different efforts are linked by both common theoretical assumptions and methodologies derived from the several disciplinary approaches our work naturally involves. Theoretically, we share such notions as that thinking is always embedded in culturally meaningful contexts which in turn are shaped by their institutional settings, and the idea that cognition is distributed across persons and the artifacts that mediate their activity. Methodologically we share a commitment to the study of changes in person-context relations over time, the use of multiple indices of behavior, and the need for methods that document the perspectives of the participants in the activity.

Although members collaborate on aspects of each other's projects, the central joint activity which all members of the Laboratory participate in is the weekly LCHC seminar. The LCHC seminar is more than a forum where members talk about their work, listen to invited speakers, and participate in critical readings of relevant scientific literature; it is also a forum in which members engage in collective reviews of significant bodies of research which are then published with LCHC as an author. During the period under review, four such articles have been written: one on context and education for the National Research Council, one on cross-cultural research, development and education, in the *American Psychologist*, and two on computers, computer networking and education in the *Harvard Educational Review* and *The SRCD Newsletter*. At present the group is preparing a joint article on cultural-historical, activity based approaches to psychological research.

LCHC faculty also organize joint sessions in major conferences and publish their work in edited volumes and special journal issues focused on the cultural-historical approach to cognition. A good example is a 1991 special issue of the international journal, *Learning and Instruction* on culture and learning. In their commentary, Giyoo Hatano and Naomi Miyake write: "Some readers may have recognized that all the authors of the articles in this special issue belong to, or are heavily influenced by, the 'sociohistorical' school (or, more specifically, the Laboratory of Comparative Human Cognition at the University of California, San Diego version of it). It is true that this school has been the driving force in the research area of culture and learning, and that a majority of leaders belong to this school."

During the period under review LCHC has initiated and coordinated an international "extended LCHC seminar" using a computer-based telecommunications system called XLCHC which currently includes approximately 425 researchers from 16 countries. XLCHC creates a forum in which the basic themes of LCHC's research program - the inter-relationships between cognition, culture, development, activity,

education, and work - are discussed in an open manner via e-mail. XLCHC discussions are currently entering the "hard copy" research literature and at least two Ph.D. dissertations are being conducted on this new form of scholarly discourse. An especially valued feature of XLCHC is the fact that it extends the multi-cultural discussion of the Laboratory's key concerns.

LCHC also sponsors specialized seminars about once a quarter which grow out of the weekly seminar. The basic difference between special and weekly seminars is that the special seminars involve people from other UCSD departments and ORU's and people from other universities. These, too, have been issued in publications. An example is the seminar on collective memory, which was first published as a special issue of *The Quarterly Newsletter of the Laboratory of Comparative Human Cognition* and then as a book edited by two Lab visitors, David Middleton and Derek Edwards from the United Kingdom.

Finally, LCHC hosts specialized workshops or working groups where researchers from institutions in various parts of the world interested in pursuing particular lines of work collaboratively are brought together to hammer out common concerns.

The LCHC maintains active relationships with colleagues in several social science departments. All LCHC faculty are participants in the Cognitive Science Program. Cole has a joint appointment in Psychology and is a member of the faculty advisory board of the TEP. Vasquez is a regular member of the TEP faculty. Members of various departments (e.g., D'Andrade and Luhrman from Anthropology; Cicourel, Hutchins, and Norman from Cognitive Science; Padden, Schudson, and Shaiken from Communication; Mehan from Sociology) are frequent participants and contributors in special LCHC symposia.

## ACADEMIC AND PUBLIC SERVICE

Below we list the faculty who have been associated with LCHC during the period under review. The first three years of this period were ones of transition. In 1985 James Wertsch joined the UCSD faculty and the Laboratory. He became director of the Laboratory in 1986, coincident with Michael Cole being on sabbatical and it was anticipated that he would head the laboratory in the coming years. However, much to our regret, Dr. Wertsch left UCSD in 1987, at which time Dr. Cole took up the directorship on an interim basis. In 1988, Yrjö Engeström joined the faculty as director of the Laboratory, a position he continues to hold.

### UCSD Faculty Associated with LCHC:

1985-88	Carol Padden, Communication
1985-pres	Michael Cole, Communication & Psychology
1985-pres	Gerald Balzano, Music
1987-pres	Yrjö Engeström, Communication
1985-86	Luis Moll, Communication
1985-87	James Wertsch, Communication & Psychology
1985-87	Alonzo Anderson, OASIS
1985-87	Esteban Diaz, Communication
1986-87	Alessandro Duranti, Communication
1988-89	David Bakhurst, Communication
1989-90	David Middleton, Visiting Professor, Communication
1990-91	Roger Saljo, Visiting Professor, Communication
1990-pres	Olga Vasquez, Communication
1990-pres	Philip Agre, Communication
1992-pres	Adrian Cussins, Philosophy

### Resident Visitors, Short-Term Visitors, Seminars, Workshops & Conferences

1985-1986

#### Resident Visitors:

Charles Crook - University of Durham, United Kingdom  
 Yrjö Engeström - University of Helsinki, Finland  
 David Middleton - Loughborough University, United Kingdom  
 Yutaka Sayeki, University of Tokyo, Japan  
 Vibeke Rehnitzner, University of Copenhagen, Denmark

#### Short-Term Visitors:

Antonio Battro, University of Argentina

**Seminar:**

**Cognition and the Arts**

April 1-4, 1986

Presenter: Yutaka Sayeki, University of Tokyo

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**1986-1987**

**Resident Visitors:**

Juan D. Ramirez - University of Sevilla, Spain

Monica Hamolsky, New York University

Aksel Mortensen, University of Copenhagen, Denmark

Arne Paulsen, University of Copenhagen, Denmark

Jacquelyn Mitchell, UC Davis

**Short-Term Visitors:**

Kimberly Kinsler, Hunter College

Giyoo Hatano, Dokkyo University, Japan

A.V. Belyaeva, Institute of Psychology, Moscow

V.E. Teremetsky, Institute of Psychology, Moscow

**Workshop:**

**Workshop on Research Issues in Interactive Video Communications Between the US and the USSR - funded by the MacArthur Foundation**

August 19-20, 1986

**Participants:**

Michael Cole, Facilitator

Michael Holquist, Yale University

Sarah Michaels, Harvard School of Education

Jonathan Sanders, Historian

John Boyer, Producer, **Inside Story**

Roger Molander, Roosevelt Center, Washington, D.C.

Eleanor Ochs, University of Southern California

James Wertsch, UC San Diego

Horace Newcomb, University of Texas, Austin

Tracy Gray, Roosevelt Center, Washington, D.C.

Robert Manoff, Center for War Peace and News Media, NYU

Percy Tannenbaum, UC Berkeley

Frederic Mosher, Carnegie Corporation

George Hogenson, MacArthur Foundation

Alessandro Duranti, UC San Diego



Aleksandra Belyaeva, Institute of Psychology, Moscow, USSR  
Vladimir Teremetsky, Institute for Automated Systems, USSR

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1987-1988

**Resident Visitors:**

Yasuko Kawatoko, Daito-bunka University, Japan

**Resident - Graduate Student Training:**

Dale Lipschultz, Erikson Institute, Chicago

**Short-Term Visitors:**

Giyoo Hatano, Dokkyo University, Japan

Aleksandra Belyaeva, Institute of Psychology, Moscow, USSR

Pedro Pedraza, Hunter College, NYC

**Workshop:**

**Russian-American Workshop on Joint Research in Education**

August 8-15, 1987

**Participants:**

Michael Cole, Organizer

Paul Reese, New York

Sylvia Weir, Harvard University

Sarah Michaels, University of Massachusetts

Bertram Bruce, BBN, Boston

Chris Hancock, Harvard University

Andrew Kravin, UC Berkeley

Andrea DiSessa, UC Berkeley

Alan Schoenfeld, UC Berkeley

Toshihiko Nagasaka, National Institute for Educational Research, Japan

Vera John-Steiner, University of New Mexico

Courtney Cazden, Harvard University

Shirley Brice-Heath, Stanford University

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1988-1989

**Resident Visitors:**

Naoki Ueno, National Institute for Educational Research, Japan

Carl Ratner, Humboldt State University

Roger Saljö, University of Linköping, Sweden

Mariane Hedegaard, University of Aarhus, Denmark

Yutaka Sayeki, University of Tokyo, Japan

Charles Crook, University of Durham, United Kingdom

Derek Edwards, Loughborough University, United Kingdom  
Robert Serpell, University of Zambia, Zambia

**Workshop:**

**Soviet-American Communications Research Meeting**  
July 6-17, 1988

**Participants:**

Aleksandra Belyaeva, Institute of Psychology, Moscow  
Alfred Ajlamazian, Academy of Sciences, Moscow  
Galina Soldatova, Institute of Programming Systems, Moscow  
Vitalij Rubtsov, Institute of Gen'l & Ped Psychology, Moscow  
Leonid Milgram, Principal, School 45, Russia  
Elena Samojlenko, Institute of Psychology, Moscow  
Seth Chaiklin, Columbia University  
Richard Ricard, Harvard University  
Marge Kosel, SUNBURST Corporation  
Warren Schloat, SUNBURST Corporation  
Alan Schoenfeld, SESAME, UC Berkeley  
Frederic Mosher, Carnegie Corporation  
Deanna Arsenian, Carnegie Corporation  
Michael Cole, UC San Diego  
Peg Griffin, UC San Diego

**Conference:**

**Work and Communication**  
July 11-15, 1988  
Coordinator: Yrjö Engeström

**Participants:**

Michael Schudson, Dept. of Communication, UCSD  
Michael Cole, LCHC, UCSD  
Robert Kraut, Bell Communications Research, NJ  
Chandra Mukerji, Dept of Communication, UCSD  
Ed Hutchins, ICS, UCSD  
Jean Lave, Institute for Research on Learning, Palo Alto, CA  
David Middleton, Loughborough University, United Kingdom  
Vladimir Zinchenko, Academy of Pedagogical Sciences, Moscow  
Chantale Hetu, Dept of Sociology, UCSD  
Leena Norros, Stte Tech Research Center, Finland  
Leonardo Pinsky, Physiology du Travail-Ergonomie, Paris  
Kirsti Launis, Institute of Occupational Health, Finland  
Aaron Cicourel, Dept of Sociology, UCSD  
David Bakhurst, Exeter College, United Kingdom

Arne Raeithel, Dept of Psychology, University of Hamburg, Germany  
Sylvia Scribner, Developmental Psychology Program, CUNY

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**1989-1990**

**Resident Visitors:**

Charles Crook, University of Durham, United Kingdom  
Falk Seeger, University of Bielefeld, Germany  
Marta Kohn de Oliveria, Universidade of Sao Paulo, Brazil

**Short-Term Visitors:**

Susan Leigh Star, UC Irvine  
William Blanton, Appalachia University, North Carolina  
Alexander Suvorov, Moscow State University, Russia  
Felix Mikhailov, Institute of Philosophy, Russia  
Lydia Obukhova, Moscow State University, Russia

**Seminar:**

**Sociohistorical Development of Verbal Thinking**

October 23, 1989

Presenter: Peter Tul'viste, University of Tartu, Estonia, USSR

Discussants: Roy D'Andrade, Tanya Lührman, Ed Hutchins, Michael Cole,  
Yrjo Engestrom

**Seminar:**

**The Development of Language and Thought in the Blind Deaf**

February 11, 1990

**Participants:**

Alexander Suvorov, Moscow State University  
Felix Mikhailov, Institute of Philosophy, Russia  
Lydia Obukhova, Moscow State University  
Carol Padden, Dept. of Communication, UC San Diego  
David Bakhurst, Dept. of Communication, UC San Diego  
Michael Cole, Dept of Communication, UC San Diego  
Yrjö Engeström, Dept. of Communication, UC San Diego

**Seminar:**

**Cultural and Cognitive Interpretations of Expertise**

April 23, 1990

Presenter: Rainer Bromme, University of Bielefeld, Germany

**Seminar:**

**The Concept of Action in Symbolic Interactionism**

May 3, 1990

Presenter: Anselm Strauss, UC San Francisco

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**1990-1991**

**Resident Visitors:**

Roger Saljö, University of Linköping, Sweden

Stig Brostrom, Royal Danish School of Educational Studies, Denmark

David Middleton, Loughborough University, United Kingdom

**Seminar:**

**Artifacts and Cognition**

November 20, 1990

Presenters: David Bakhurst, Yrjö Engeström, and Donald Norman, UC San Diego

Commentators: Michael Cole, Roy D'Andrade and Edwin Hutchins, UC San Diego

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**1991/92:**

**Resident Visitors:**

Lillemor Adrianson, University of Goteborg, Sweden

**Resident - Graduate Student Training:**

Kristian Terp, University of Copenhagen, Denmark

**Short-Term Visitors:**

Stig Brostrom, Royal Danish School of Educational Studies, Denmark

Naoki Ueno, National Institute for Educational Research, Japan

Olga Marchenko, Moscow University, Russia

Aleksandra Belyaeva, Institute of Psychology, Moscow, Russia

Roger Saljö, University of Linköping, Sweden

Vera Wenzel, Forschungsschwerpunkt Wissenschaftsgeschichte Institute, Berlin

**Symposium:**

**Expertise as Collaborative Activity**

December 10, 1991

Presenters: Ed Hutchins, Yrjö Engeström, Barry Saferstein, UC San Diego; Steve Reder, Northwestern Regional Institute, Oregon; Lucy Suchman, Xerox Parc

Commentator: Philip Agre, UC San Diego

**Working Meeting:**

**Working Group on Education Research**  
December 12, 1991

**Participants:**

Patricia Graham, President, The Spencer Foundation  
Michael Cole, Communication  
Yrjö Engeström, Communication  
Hugh Mehan, Teacher Education  
Olga Vasquez, Communication  
Philip Agre, Communication  
Carol Padden, Communication Department

**Seminar:**

**Once and Future Status of the Idea of Cultural Psychology**  
March 16-17, 1992

**Presenters & Participants:**

Michael Cole, UC San Diego  
Giyoo Hatano, Dokkyo University  
Roy D'Andrade, UC San Diego  
Mary Gauvain, Scripps College  
Patricia Greenfield, UC Los Angeles  
Edwin Hutchins, UC San Diego  
Donald Norman, UC San Diego  
Geoffrey Saxe, UC Los Angeles  
James Stigler, UC Los Angeles  
Thomas Weisner, UC Los Angeles  
Philip Agre, UC San Diego  
Olga Vasquez, UC San Diego  
Jonathan Grudin, UC Irvine  
Clea Fernandez, UC Los Angeles  
Tine Falk, UC Los Angeles  
Laura Romo, UC Los Angeles

**Workshop:**

**Research on Work Cognition**  
April 23, 1992

**Participants:**

Joseph Glick, CUNY  
Lia DiBello, CUNY  
King Beach, Michigan State University  
Michael Cole, UC San Diego

Yrjö Engeström, UC San Diego  
Edwin Hutchins, UC San Diego  
Katherine Brown, UC San Diego  
Judith Gregory, UC San Diego

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## PUBLICATIONS

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### P. AGRE - PAPERS PRESENTED

"Lave and Walkerdine on Mathematics," American Educational Research Association, San Francisco, April 1992.

"Articulated Tracking and the Political Economy of Privacy," CHI'92 Symposium on Basic Research Topics, Monterey, May 1992.

"Notes on Beach, Cole, and Hutchins," American Psychological Society, San Diego, June 1992.

"Contests of Framing in Environmental Discourse," Society for Text and Discourse, San Diego, June 1992.

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Cole, M. (1990). Preface. In D. Middleton & D. Edwards (Eds.), **Collective remembering**. London: SAGE. pp vii-ix.

Cole, M. (1991). On putting Humpty Dumpty together again: A discussion of the papers on the socialization of children's cognition and emotion. **Merrill-Palmer Quarterly**, 37(1), 213-222.

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## Graduate Students/Postdoctoral Fellows Associated with LCHC

### Teaching Contributions

Below we list the graduate students for whom we have served as official advisors in recent years. This list represents only a small fraction of the teaching program of LCHC. LCHC follows an "open door policy" that actively encourages the participation of both graduate and undergraduate students in our various research efforts. The LCHC seminar is open to students who are listed as contributing authors on LCHC publications. In recent years students from music, philosophy, sociology, anthropology, psychology, communication and cognitive science have participated regularly in the seminar.

XLCHC not only invites participation by students, they have a privileged status in its discussions: all discussions are open to students but in addition there is a special closed discussion which only students have access to.

LCHC faculty are also active in both undergraduate mentoring programs and teach several 198/199 and 299 courses each quarter. We have not kept records of the number of these students, but the present quarter is representative. At present LCHC faculty are working with 10 undergraduates in special research courses. A basic apprenticeship model is followed with these students, who are treated as junior research members of LCHC.

Finally, LCHC has a long history of post-doctoral training in comparative cognitive research which emphasizes research on cultural differences in development. It is a sad fact that since the mid-1980's our emphasis on the training of minority group

students was actively discouraged at the national level. Despite our proven record of accomplishment, we could not win funding. This unfortunate situation was ameliorated by the advent of the presidential and chancellor's fellowships, which has allowed LCHC to become actively involved in this kind of education once again. We have been encouraged once again to seek funding at the national level and are doing so this year.

#### Graduate Students:

1983-86	Sheila Broyles	Psychology	M. Cole
1983-86	Billy Vaughn	Psychology	M. Cole
1984-867	Lehman Benson	Psychology	M. Cole
1984-87	Martha tumSuden	Communication	M. Cole
1984-88	Catherine King	Psychology	M. Cole
1989-90	Sarah Banet	Communication	M. Cole
1989-90	Roger Smeaton	Communication	M. Cole
1990-91	Lora Taub	Communication	M. Cole
1988-pre	Melissa Lemons	Psychology	M. Cole
1990-pres	Katherine Brown	Communication	Y. Engestrom
1990-pres	Judith Gregory	Communication	Y. Engestrom
1991-92	Jackie Byers	Communication	M. Cole
1991-pres	Carol Christopher	Communication	Y. Engestrom
1992	Kirsten Foot	Communication	M. Cole

#### Postdocs:

1985-87	M. Armstrong	CHIP	M. Cole
1985-87	Debora Scheffel	CHIP	M. Cole
1988-90	Olga Vasquez	Communication	M. Cole
1992	C. Shannon-Morla	Communication	M. Cole

#### Contributions to the Community:

An unusual feature of LCHC is its commitment to forging close links between basic research and practice. This aspect of the Laboratory's work follows from its emphasis on contextual, activity-based approach to the study of human cognition. As a consequence of this orientation, every project originating at LCHC takes our faculty and students off of the UCSD campus and into the surrounding community. For example, Olga Vasquez is working with members of the Mexicano/Latino community in Solana Beach. Phil Agre is working in a school in Oceanside in hearings involving issues of environment law. Yrjö Engeström has worked in local courts and clinics and is currently, along with Adrian Cussins, working with teachers in a school in Solana Beach. Michael Cole has forged links with the Boys and Girls Clubs of North County. LCHC as a whole also serves as a communications hub for a variety of policy-oriented state-wide and national organizations, providing technical support and social facilitation of their activities.

## ADMINISTRATION

Management of the Laboratory is a shared enterprise, coordinated by the Director with input from the MSO. In the day to day life of the Laboratory, different faculty take responsibility for different functions, depending upon availability and a shared sense of equity. Every effort is made to keep bureaucratic duties to a minimum by sharing responsibilities for the various laboratory tasks.

### 1985-1992 Directors, Acting Directors

1978-86	Michael Cole
1986-87	James Wertsch
1987-89	Michael Cole
1989-91	Yrjö Engeström
1991-92	Michael Cole, Acting
1992-pres	Yrjö Engeström

### Advisory Committee Members

In addition to Lab faculty members, the Advisory Committee is made up of the following members from UCSD and other institutions:

Donald A. Norman, Cognitive Science  
Roy D'Andrade, Anthropology  
David Middleton, University of Loughborough, United Kingdom  
James Wertsch, Clark University, Massachusetts  
Luis Moll, University of Arizona  
Catherine King, University of New Orleans  
Roger Saljö, University of Linköping, Sweden