

## Directorial Debut

It is a great honor for me to become Director of the Institute of Cognitive and Decision Sciences, a position that was held in the past by such luminaries as Doug Hintzman, Mike Posner, Sarah Douglas, and John Orbell. In the shadow of their achievements, my goal is simple: I will try to support the Institute's primary purpose—to provide a forum for interdisciplinary research and scholarship.

*Forum* originally refers to a physical space where people can come together, and that our new offices on the second floor of Straub Hall (253-259) provide such a space, and a far more suitable one than the basement rooms we had before. (Many thanks to Robert Mauro who is primarily responsible for this improvement and to Marjorie Taylor and Spike Gildea who helped with the smooth administration of the move this summer.) We now have a secretarial office, a work room (with printers and copier), a small conference room, visitor offices, and space for Institute members who have their regular offices elsewhere on campus but would like to interact with other members or conduct research in our laboratories. These laboratories continue to be located in the Richard J. Hill wing (Straub 171-178), including our wireless laboratory for interpersonal cognition, and they are available to all Institute members for conducting research.

A forum is also an *audience* of interested people. Over the past years, we have cultivated two audiences: that of an interdisciplinary brown bag (every other Wednesday at noon, organized by Holly Arrow) and that of a monthly colloquium (on Monday at 3:30PM, organized by Sara Hodges and John Orbell). While the size of the brown bag audience is increasing, that of the colloquium audience is unfortunately decreasing. We are making efforts to invite eminent scholars from various fields, and we hope that Institute members, regardless of their own and the speakers' disciplinary affiliation, will return to the colloquium and expand this important scholarly forum.

Finally, a forum is a supportive community that fosters exchange, critique, and collaboration among scholars who share common interests. Over the past two years, the intellectual organization of the Institute has changed from a few broad areas to a larger number of flexible focus groups. In a focus group, two or more Institute

members come together to discuss a topic of interest, plan joint research, apply for external grant support, organize a conference, or write a book. The Institute web page will try to be up to date on the existence and activities of these focus groups, and I invite Institute members to speak to me if they would like to have institutional support for a new focus group.

For the Institute of Cognitive and Decision Sciences to be an exciting physical place, audience, and community, we rely on active members who are willing to transcend the disciplinary, intellectual, and institutional boundaries of normal academic life. To support this willingness among steady Institute contributors and perhaps incite it in new contributors, the Executive Committee and I have formulated a number of goals and initiatives for the coming years, described on pages 4 and 5. More details on some of these initiatives will appear in upcoming Newsletters, and I invite you to write to me with your comments on any of them or on other initiatives you would like to see.

With best regards,

Bertram F. Malle,  
 Director, Institute of Cognitive and Decision Sciences  
 Email: [bfmalle@darkwing.uoregon.edu](mailto:bfmalle@darkwing.uoregon.edu)

### *Short Curriculum Vitae of Bertram F. Malle*

Born 1964 in Graz, Austria. At the age of 16, decides that he wants to become an academic scholar in either philosophy, psychology, sociology, or linguistics, or perhaps all of them. Studies philosophy, linguistics, and psychology at the University of Graz and completes two co-terminal Master's degrees, one in philosophy, one in psychology. Works as a research assistant at the Graz psychology department, as a statistician for a psychiatric research group, as a community liaison for the Road Safety Board, and as an associate for the Bureau of Social Research. Given the bleak prospects for an academic career in Austria, decides to apply to various psychology Ph.D. programs in the U.S. Gets admitted to Stanford in 1990. Jumps of jubilation. Graduates in 1994 and is hired at the Institute of Cognitive and Decision Sciences and the psychology department at the University of Oregon. Receives the Outstanding Dissertation Award of the Society of Experimental Social Psychology in 1995. Fights with reviewers and journal editors; loses early battles. Receives a four-year CAREER award from the National Science Foundation in 1997. The same year, receives an instrumentation grant with John Orbell from the National Science Foundation to build a wireless laboratory

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## **Symposium on Language Evolution**

T. Givón

One of the most prominent activities sponsored by the Institute during our “year of evolution” was the Symposium on the Evolution of Language out of Pre-Language, held here last spring. The symposium brought together a group of about 18 people, most of them either psychologists, neuroscientists, linguists, or anthropologists. While diverse in their disciplinary background, the participants shared a broad perspective on brain, mind, language and culture as interdependent evolutionary products. In the main, they tend to subscribe to the view that human mind, culture, and language are just as obviously the products of adaptively-guided (selected) evolution as the brain or the hand. Within this general orientation, the rise of human language is not viewed as a serendipitous mutation—a brand-new “language organ”—but rather as a gradual and adaptively-driven elaboration and extension of pre-existing mind/brain structures. The evolution of human language is thus seen to follow the same mundane, route of gradual adaptive innovation as in biology (homoplasy).

Direct evidence of intermediate steps (“fossils”) in the evolution of human language is alas mostly absent. Nonetheless, interesting analogical evidence is available, and is indeed instructive, provided it can be interpreted both carefully and creatively. Among the available data with potential relevance to language evolution are:

- the ontogeny of child language
- second language acquisition (pidginization)
- diachronic (historical) change of extant language(s)
- the patterns of cognitive-neurological connectivity of the various “modules” in the current human mind/brain
- material fossils of other higher human capacities (tool-making, art)

None of these provide decisive proofs for language evolution. But taken together they are nonetheless highly suggestive and constitute a legitimate if complex and often analogical data-base from which specific hypotheses about the evolutionary scenario may be inferred. What drives the oft-speculative preoccupation with language evolution is the recognition that language, like all biologically-based phenomena, cannot be fully understood outside an evolutionary framework.

The scholars who participated in person or sent their papers to be discussed at the symposium were:

*Brian MacWhinney* (Carnegie-Mellon; psychology)  
*Joan Bybee* (New Mexico; linguistics)  
*Gertraud Fenk-Oczelton* (Klagenfurt; linguistics)  
*Dan Slobin* (Berkeley; psychology)  
*Susan Goldin-Meadow* (Chicago; psychology)  
*Jill Morford* (New Mexico; linguistics)  
*Peter MacNeilage* (Texas; psychology)  
*Barbara Davis* (Texas; psychology)  
*Michael Tomasello* (MPI-ÄÖipzig; evolutionary anthropology)  
*Morton-Anne Gernsbacher* (Wisconsin; psychology)  
*David Robertson* (Georgia Tech; psychology)  
*Sue Savage-Rumbaugh* (Georgia State, primatology)  
*John Haiman* (McAlester; linguistics)  
*Charles Li* (Santa Barbara; linguistics)  
*Bertram Malle* (Oregon; psychology)  
*Dare Baldwin* (Oregon; psychology)  
*Don Tucker* (Oregon; neuroscience and psychology)  
*Mitzi Barker* (Oregon; linguistics)  
*T. Givón* (Oregon; linguistics and cognitive science)

The symposium was organized by J. Bybee, B. Malle and T. Givón. The proceedings, edited by and T. Givón and B. Malle, will be published in 2002 by J. Benjamins (Amsterdam).

## **A Small Revolution in the Institute**

John Orbell, Past Director

Institutes change with their membership as well as with changes in the science on which they are built. The Institute of Cognitive and Decision Sciences was originally organized around three substantive areas, Language, Culture and Cognition, Cognitive Neuroscience, and Social Cognition and Decision Making. In the few years before 1999 it became clear to many members that these categories no longer reflected what was actually being done by members of the Institute, and that a rethinking was in order. There were other structural issues, as well—notably our funding situation and the status of the Colloquium series.

Regarding funding, the Institute had received a fixed sum from the University since its start, with the understanding that any overhead return on grants through the Institute would be counted as deductible against that sum. While the certainty of a fixed income was nice, the system also meant, effectively, that members always took their grants through their home departments so that the Institute could not



### Short Curriculum Vitae

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of interpersonal cognition at the Institute. Increasingly friendly relations with reviewers and editors. Promotion and tenure at the University of Oregon. Publishes an anthology with Lou Moses and Dare Baldwin on *Intentions and Intentionality* (MIT Press, 2001). Executive committee member for the Institute 1998-2001. Director since June 2001.

#### Selected publications:

Malle, B. F., & Horowitz, L. M. (1995). The puzzle of negative self-views: An explanation using the schema concept. *Journal of Personality and Social Psychology*, 68, 470-484.

Malle, B. F., & Knobe, J. (1997). The folk concept of intentionality. *Journal of Experimental Social Psychology*, 33, 101-121.

Malle, B. F. (1999). How people explain behavior: A new theoretical framework. *Personality and Social Psychology Review*, 3, 23-48.

Malle, B. F., & Ickes, W. (2000). Fritz Heider: Philosopher and psychologist. In G. A. Kimble & M. Wertheimer (Eds.), *Portraits of Pioneers in Psychology* (Vol. 4, pp. 193-214). Washington, DC and Mahwah, NJ: American Psychological Association and Erlbaum.

Malle, B. F., Moses, L. J., & Baldwin, D. A. (Eds.). (2001). *Intentions and intentionality: Foundations of social cognition*. Cambridge, MA: MIT Press.

Malle, B. F., & Pearce, G. E. (2001). Attention to behavioral events during social interaction: Two actor-observer gaps and three attempts to close them. *Journal of Personality and Social Psychology*, 81, 278-294.

Malle, B. F. (in press). Verbs of interpersonal causality and the folk theory of mind. In M. Shibatani (Ed.), *The grammar of causation and interpersonal manipulation*. Amsterdam, NL: Benjamins.

Malle, B. F., & Nelson, S. E. (in press). Judging *mens rea*: The tension between folk concepts and legal concepts of intentionality. *Behavioral Sciences and the Law*.

### Small Revolution

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accumulate overhead money for various "collective good" projects.

Regarding the Colloquium series, our experience was that the talks were substantially attended only by individuals with a particular interest in the presented topic and the series was no longer a vehicle for exchange of ideas more broadly.

During the Spring of 1999 the Institute discussed these and related issues, and gave authority to a "renewal committee" to redesign the structure and mission of the Institute and to make recommendations to the Vice Provost for Research as to how things might be changed. In brief, our recommendations were as follows:

(1) We should retain the present level of support from the Administration, but any overhead return from grants submitted through the Institute should now be returned to the Institute for use in providing collective goods, preferably valuable for advancing the work of many members. After a suitable "phase in" period, this arrangement should be reviewed to see whether, and to what extent, the Institute would still need a fixed level of support from the University.

(2) The Institute should be organized around a set of "focus groups," the membership of which would be self-selected according to interests. Our

expectation was that focus groups would come and go, depending on interests that are present among members, and that they should organize to advance those interests as they see fit.

(3) The Institute should retain a monthly colloquium time (Monday, 3:30) for selected speakers who would often come from outside the university. A speakers' committee would organize this relatively small number of higher-profile events to replace the earlier weekly series. Further, we should continue to run a bi-weekly brown-bag series that is oriented specifically to introducing people from diverse disciplines to what work is going on elsewhere on campus.

After discussions with all the departments with faculty active in the Institute and with the Vice Provost, this structure was approved and instituted. With some qualifiers, it appears to be working well. There have been several proposals directed through the Institute, but—as yet—the Institute is not getting rich on overhead returns. Some focus groups are quite active, and others that started off a couple of years ago seem to have faded away—more or less as expected. But there are some new ones, not anticipated at the outset, that have begun to meet. The active focus groups, generally, have meetings every couple of weeks, at which there is discussion around some pre-arranged topic. (Details on these groups' activities can be found on the Institute's web site.) And the bi-weekly brownbag has been a big success (thanks to Holly Arrow's organizing energy), with a reliable attendance of 20 or more, and a succession of interesting speakers. This revolution has not produced Nirvana. But few revolutions do; and, as anyone involved with an institute knows, they are always works in progress.



## Sackler Ducks

Michael Posner

The Sackler Institute at Weill Medical College of Cornell In New York City was created in July of 1998 and has taken as its principle goal an understanding of human brain development by studies using imaging, genetics and behavior of infants and young children. Even though it is based in New York, the Sackler Institute is national and has developed particularly close ties to the University of Oregon.

In addition to my serving as its founding director, Bruce McCandliss, an Oregon Ph.D., is an Assistant Professor, Michael Worden, who received his M.A. at Oregon with Don Tucker, is an Instructor, Elise Temple, one of Oregon's top six senior undergraduates a few years ago, is an Assistant Professor, and Matt Davidson, who received an Oregon Ph.D. with Rich Marrocco, is now a Research Fellow.

The Sackler Institute has also drawn upon the Oregon expertise in producing a full issue of *Developmental Science* (2001 volume 4, number 3) devoted to current research opportunities in the field of human brain development. Mary Rothbart served with me as editor and was also director of the panel on temperament and emotion, while Helen Neville directed the language panel and John Fentress (visiting Adjunct Professor at Oregon) led the psychobiology panel.

In its New York laboratories, the Sackler Institute has scanning facilities including a 3T MRI, a 128-channel EEG (made by Eugene-based EGI), and a genomic laboratory (joint with Rockefeller University) involved with genetic studies of humans and mice. The Institute has joint grants not only with Oregon and Rockefeller, but also with UC Irvine, Princeton, Yale, and Columbia Universities.

A central topic at the Sackler Institute is the study of the development of attentional control systems. For example, as part of the Princeton University Contie Center for Neuroscience, B.J. Casey is using fMRI to study the activity of striatal-prefrontal circuits in the ability of children to inhibit their responses. This work with normal children complements studies of children diagnosed with ADHD in whom we study abnormalities in brain circuitry related to their disorder. Jim Swanson, who serves as a Senior Research Associate in the Sackler Institute, was a major figure in the development of once-a-day pharmacological treatment for children with ADHD and together with McCandliss is attempting to develop new behavioral treatments that might change brain circuitry related to attention.

Recently, we have developed an attentional network test (ANT) that provides scores for individuals for each of the three attention networks studied at Oregon by Marrocco, Davidson, Posner and others. We have studied the heritability of each of the networks and their development in early childhood. This test has spread rather widely and is being used for genetic studies in Finland, child development studies in Spain, adolescent development in Portland (Lesa Ellis and Tom Dishion), and studies of attentional abnormalities in the U.S. and China. Based upon Marrocco's pharmacological work, we are currently examining candidate genes related to the networks.

Another major project of the Sackler Institute is in the area of literacy. Led by Bruce McCandliss, the Institute has been exploring changes in brain networks produced by various forms of literacy training. Bruce has been able to establish large changes in the skill of children who read poorly and trace the networks influenced by the training. The Institute has been working with the Organization of Economic Cooperation and Development, consisting of 21 developed nations, on a series of workshops of the role of human brain studies in educational design.

You can find out more about the Sackler Institute's activities by examining its web site ([www.sacklerinstitute.org](http://www.sacklerinstitute.org)), where you can take the Attention Network Test yourself (click on "people" and follow Jin Fan). Or you may want to get some of the recent publications of the Institute listed on each of the participating researchers' home pages.

### ***Institute Initiatives for 2001-2004***

**Student research funding.** Beginning this year we will award small research grants to graduate or undergraduate students who are engaged in interdisciplinary research. Inquiries or application letters can be submitted at any time to a member of the Executive Committee:

Sara Hodges  
<sdhodges@darkwing.uoregon.edu>  
John Orbell  
<jorbell@oregon.uoregon.edu>  
Eric Pederson  
<epederso@darkwing.uoregon.edu>  
Larry Sugiyama  
<sugiyama@darkwing.uoregon.edu>  
or to the Director, Bertram Malle  
<bfmalle@darkwing.uoregon.edu>

A letter of application, no more than two pages long, must include: (a) a brief description of the proposed



## Institute Initiatives

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research, (b) an argument for the interdisciplinary nature of the research, (c) name and contact information of a faculty sponsor, and (d) suggested use of the grant money (e.g., for paying research subjects, purchasing equipment, paying a programmer). Grant amounts will be limited to \$500 or less.

**Technical reports.** We would like to encourage Institute members to add to our collection of Institute Technical Reports. Besides submitting genuinely technical documents (e.g., describing a method, instrumentation, or a computer program), consider submitting manuscripts under review, unpublished conference papers, chapters in progress, or student theses. We have begun to make Tech Reports available electronically and will try to post all future Reports on the Institute web page.

**Web page.** We plan to document past Institute colloquia, conferences, and publications on our web page and also compile a list of like-minded interdisciplinary institutes from around the world. If you have any suggestions for other resources the web page should contain, please contact Vonda Evans <vevans@oregon.uoregon.edu>.

**Indirect cost returns on research grants.** The Institute's new funding system allows us to reclaim a portion of the overhead costs of any Institute-run research grant and use the money for communal resources that benefit the grant holder and some other Institute members. We strongly encourage members to consider running a grant through the Institute, because it benefits both the researcher and the Institute as a whole.

**Call for scholarly meetings.** In the past, the Institute has funded a number of successful conferences, many of which have led to published proceedings. Members are encouraged to propose high-profile conferences, but also variants of the typical conference format, such as workshops (e.g., a weekend during which a particular scientific method is presented and discussed), summer schools (a meeting for top graduate students working on a particular topic) or community events (e.g., a day of presentations and discussions on problems of decision making for local business leaders or on group dynamics and conflict resolution for local law enforcement).

## ***Inclusion, Exclusion, and Sex Segregation in Self-Organized Group Formation***

Holly Arrow

Small groups are often assembled by powerful outsiders in a top-down fashion. Managers assign workers to teams, officers assign soldiers to military units, and

researchers assign participants to ad hoc experimental groups. Many groups, however, are not built. Instead, they assemble themselves in an organic fashion, on the basis of the shared attraction of members to one another, an idea for a collective activity, or a single charismatic person. In short, these groups emerge. A researcher's difficulty of arranging to be present at the founding of such naturally occurring groups may explain why there is relatively little information about the self-organization of small groups. In the laboratory, experimental groups have typically been formed by random assignment to avoid "self-selection" confounds that may hamper a clear interpretation of results. This otherwise sound methodological practice makes it impossible, however, to observe the phenomenon of self-organization by which many naturally occurring groups emerge.

To explore the dynamics of self-organization, four Institute members and colleagues developed a new experimental paradigm, called *social poker* (Arrow, Bennett, Crosson, & Orbell, 1999). Social poker is a laboratory card game that provides incentives for individuals to join together in small groups. A minimum of three people is needed to form a group that can make a card hand and earn money. The pool of eight players is large enough that two groups can form, which permits groups to compete for members and members to move between groups. Players may also become "isolates" who are left out of the groups that form. The paradigm allows us to look at dynamics at multiple hierarchical levels, from the negotiation of individual preferences to dyadic, small group, and intergroup coordination.

With support from the Decision, Risk and Management Science program of the National Science Foundation, John Orbell, Katie Burns, Scott Crosson, and I designed a series of experiments using this paradigm to investigate the choices players make about membership and resource allocation. Both decisions require that players balance competing desires. From the standpoint of "pure" self-interest, the best outcome is to be a member of a group that is as small as possible and to obtain a large share of the group earnings. Social justice concerns, however, might make people uncomfortable about leaving people out, and also favor a more equal division of group earnings. We found that participants increasingly moved toward a pattern of including everyone in the groups, even though this reduced individual earnings for group members. However, when isolates who were left out of the self-organized groups were given a \$1 "welfare" payment, inclusion of extra group members did not increase over time (Crosson, Orbell, & Arrow, 2001).

An examination of the round-by-round dynamics for the two conditions revealed that when there was no payoff

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## Self-Organized Group Formation

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for isolates, populations were most likely to partition themselves into two groups of 4 members each. This partition has the characteristics of a dynamic “attractor” (Arrow, McGrath, & Berdahl, 2000), a characteristic global pattern that arises from interactions at a more local level. In this case, the decisions and interactions of individuals trying to form or join groups are the local level; the configuration of groups is the global level. Once populations partitioned into the 4 | 4 pattern, they tended to repeat it, and transitions to this partition were observed from all other partitions of the population: two groups of 3 (and two isolates); a group of 4 and a group of 3 (with one isolate); and a group of 3 and one of 5. The global pattern of full inclusion stabilized even when membership in the two groups continued to change across successive rounds of the game, indicating that the norm of inclusion was not simply a side effect of groups maintaining a fixed membership. When the \$1 payment to isolates was added, the inclusive 4 | 4 “attractor” disappeared. A few populations stabilized at the 3 | 3 configuration, but most wandered about unpredictably from one arrangement to another. The dynamic analyses thus revealed that the addition of a “state” welfare benefit led to a different, and less stable, dynamic at the societal level of the whole population.

In a separate experiment, we looked at patterns of inclusion when the pool of potential members had cards of unequal value, putting specific players at risk of being excluded. When these redundant players were included in groups, they frequently received a small share of group earnings. However, open-ended questionnaire responses indicated that charity norms, such as giving the “extra” member a single \$1 while the card-contributing members received \$3 each, did not resolve the tension between self-interest and altruism. Unstable preferences and lack of consensus made such norms inherently unstable (Arrow & Burns, in press). In this unstable situation, a small action such as two dissatisfied people sharing their unhappiness can trigger a big change in both the distribution of members across groups and the allocation of money. When a set of people converged on attractors with broader appeal, such as equally sized groups and the recategorization of “charity cases” as full members with an equal claim on earnings, external jolts such as a change in the payoff structure were less likely to result in changes in norms. The timing of externally imposed changes did affect the relative stability of group formation patterns. An early perturbation (in Round 3 of a 7-round game) was associated with less predictable system dynamics, with players moving back and forth across rounds between fully inclusive, partially inclusive, and minimally sized

configurations. When the perturbation came late, however (in Round 6), most societies settled on fully inclusive configurations and maintained this pattern when the payoff structure was changed (Arrow, 2001).

In a third experiment, conducted by Ryan Hampton as an undergraduate honors thesis (Hampton, 1999) we looked at players’ preferences for partners based on the relative frequency of men and women in the pool of potential partners, and at the impact of these preferences on the formation of dyads and triads. Three different gender compositions were included: balanced (4 men and 4 women) majority male (6 men and 2 women) and majority female (6 women and 2 men). People chose a single partner first, and then players who successfully formed dyads attempted to recruit a third member. When gender composition was balanced, gender played no role in people’s preferences. When gender composition was skewed, those in the minority preferred one another as partners. Minority and majority members were equally likely to be included in dyads. However, when the two gender minorities joined together in a dyad, they were less successful in recruiting a third member of the group than when they paired up with a member of the majority gender (Hampton & Arrow, in preparation). This suggests that in settings with skewed compositions, segregation can be triggered by minority preferences, with no need for discrimination by the majority. In cases such as this, integrated groups and full inclusion of minority members are most likely to emerge if those in a demographic minority seek initial ties with members of the majority, and then recruit other minorities to join a mixed group.

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## Intentionality Volume Published

After organizing an Institute-sponsored conference on the topic of *Intentionality* in 1998 (see Newsletter Volume 10, No.1 and Volume 11, No.1), Bertram Malle, Lou Moses, and Dare Baldwin obtained a contract with MIT Press to publish the proceedings of this conference as an edited volume. The book includes chapters from a number of prominent scholars in philosophy, social, developmental, and cognitive psychology, primatology, and law and is graced with a Foreword by Jerome Bruner, co-founder of one of the first interdisciplinary institutes of the post-war era. Since its publication in April 2001, sales have been good, especially at the Barnes & Noble website, where it sells 20% off the list price.

### *Intentions and Intentionality*

Edited by Bertram F. Malle, Louis J. Moses, and Dare A. Baldwin  
Cambridge, MA: MIT Press, 2001.

### Introduction: The significance of intentionality

*Bertram F. Malle, Louis J. Moses, and Dare A. Baldwin*

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### **ICDS NEWSLETTER**

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