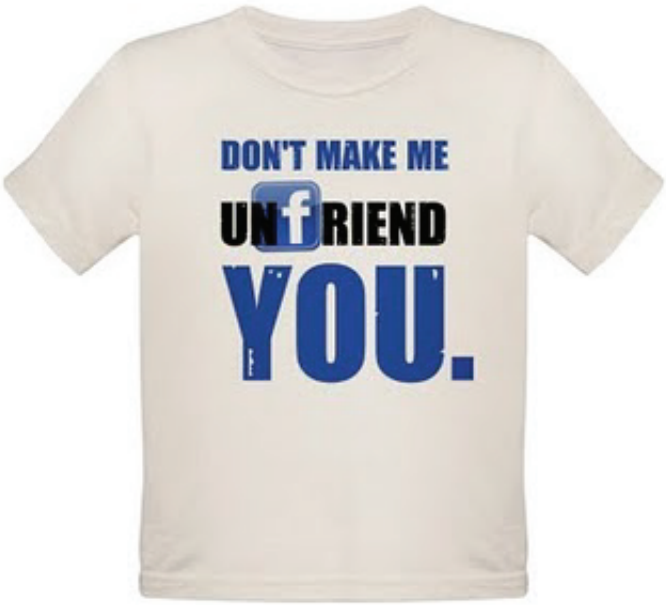
Cognitive Processes

Psychology 309a

Readings and Notes



Part 3:
Social Cognition

Lecture 17
Social Spacing

Lecture 17 begins our final section of the course, a section focusing on aspects of cognition that underlay our social abilities. That we do in fact have cognitive processes specifically designed for social behavior has only recently been appreciated by scientists, as is highlighted by the two articles assigned for today.

In today's lecture we introduce the topic of social cognition by examining a key form of decision-making that has nothing to do with the kinds of consumer-based decisions we examined in Part 2 of the course––how do we space or position ourselves relative to other people in the course of social interactions. At issue is our sense of "personal space."

This is highlighted in the first article for today, *In Certain Circles, Two Is a Crowd*, which formally introduces the notion of what personal space is, how this sense of space affects our behavior when out in public, and what happens when our personal space is violated. The article also underscores how our sense of space is so strongly integrated into our cognitive makeup that even when interacting with people in virtual environments, we still respond to virtual people spatially as if they were real.

A second key theme to emerge concerns our behavior in public.

This is highlighted in the second article for today, *'Excuse Me. May I Have Your Seat?'*, which centers on a classic study done in the 1950s where people specifically violated social norms on subways in New York by asking other people to give up their seats. What we see here is how absolutely terrifying it can be for us when we attempt to break the hidden rules of how to interact with strangers.

November 16, 2006

CORNERS

In Certain Circles, Two Is a Crowd

By STEPHANIE ROSENBLOOM

CHANCES are that in the last week someone has irritated you by standing too close, talking too loud or making eye contact for too long. They have offended you with the high-pitched shrill emanating from the earphones of their iPod or by spreading their legs unnecessarily wide on a packed subway car.

But what makes you feel hostile toward “close talkers,” as the show “Seinfeld” dubbed people who get within necking distance of you when they speak? Or toward strangers who stand very near to you on line? Or toward people who take the bathroom stall next to yours when every other one is available?

Communications scholars began studying personal space and people’s perception of it decades ago, in a field known as proxemics. But with the population in the United States climbing above 300 million, urban corridors becoming denser and people with wealth searching for new ways to separate themselves from the masses, interest in the issue of personal space — that invisible force field around your body — is intensifying.

Scientists who say Americans share patterns of movement and behaviors to protect their personal space have recently found new evidence in a cyber game.

Researchers who observed the avatars (digital representations of the humans that control them) of participants in Second Life, a virtual reality universe, found that some of the avatars’ physical behavior was in keeping with studies about how humans protect their personal space.

In other words, the digital beings adhered to some unspoken behavioral rules of humans even though they were but pixels on a screen.

Humans tend to avert eye gaze if they feel someone is standing too close. They retreat to corners, put distance between themselves and strangers, and sit or stand equidistant from one another like birds on a wire.

The study, which was accepted for publication in the journal CyberPsychology & Behavior, found that virtual environments may be another platform to study physical social interaction. It specifically found that the unwritten rules of personal space are so powerful, people even impose them on their cyber selves.

“The fact that they show up in the virtual world shows how deeply ingrained they are,” said Nick Yee, a graduate student in the department of communication at Stanford University and a lead author of the study along with Jeremy N. Bailenson, his adviser. “We don’t think about them. They’re very unconscious.”

According to scientists, personal space involves not only the invisible bubble around the body, but all the senses. People may feel their space is being violated when they experience an unwelcome sound, scent or stare: the woman on the bus squawking into her cellphone, the co-worker in the adjacent cubicle dabbing on cologne, or the man in the sandwich shop leering at you over his panini.

But whether people have become more protective of their personal space is difficult to say. Studies show people tend to adapt, even in cities, which are likely to grow ever more crowded based on population projections.

Yet studies involving airlines show the desire to have some space to oneself is among the top

passenger requests. In a survey in April from TripAdvisor, a travel Web site, travelers said that if they had to pay for certain amenities, they would rather have larger seats and more legroom than massages and premium food. And a current advertisement for Eos Airlines, which flies between New York and London, is promoting the fact that it offers passengers "21 square feet of personal space."

While people may crave space, they rarely realize how entrenched proxemics are. Scholars can predict which areas of an elevator are likely to fill up first and which urinal a man will choose. They know people will stare at the lighted floor numbers in elevators, not one another.

"In order to overcome the intimacy, you have to make sure you don't make eye contact," said Dane Archer, a professor of sociology at the University of California, Santa Cruz, who studies proxemics.

They know commuters will hold newspapers in front of them to read, yes, but also to shield themselves from strangers. And they know college students will unconsciously choose to sit in the same row, if not the same seat, each class.

"If you videotape people at a library table, it's very clear what seat somebody will take," Dr. Archer said, adding that one of the corner seats will go first, followed by the chair diagonally opposite because that is farthest away. "If you break those rules, it's fascinating," he said. "People will pile up books as if to make a wall — glare."

Edward T. Hall, an anthropologist and the father of proxemics, even put numbers to the unspoken rules. He defined the invisible zones around us and attributed a range of distance to each one: intimate distance (6 to 18 inches); personal distance (18 inches to 4 feet); social distance (4 to 12 feet); and public distance (about 12 feet or more).

But personal space is not merely a numbers game. Preferences differ from culture to culture. Scholars have found that Americans, conquerors of the wild frontier, generally prefer more personal space than people in Mediterranean and Latin American cultures, and more than men in Arab countries.

"In the U.S., it's very closely linked to ideals of individuals," said Kathryn Sorrells, an associate professor of communication studies at California State University, Northridge, who is writing a book, "Globalizing Intercultural Communications." "There's an idea that you have the right to this space," she said, noting that it was born of a culture that prizes independence, privacy and capitalism.

Dr. Archer tells of a Brazilian man he interviewed who, when speaking to the American waiters with whom he worked, used to casually touch them for emphasis. The man's overtures of friendship toward his co-workers were always rejected and he wanted to know why. So when business was slow he observed how the Americans interacted. And eventually he arrived at this conclusion: Americans hate to be touched.

"He's absolutely right," Dr. Archer said. "He figured it out by himself and no one ever told him. The sad thing about these nonverbal rules across cultures is you're on your own."

The Brazilian man's experience also shows how people are quick to judge those who break the unwritten rules, unless we are attuned to the cultural differences.

John Bringardner, 26, a staff reporter at IP Law & Business, said that when he was studying philosophy at the Sorbonne in Paris, he lived next door to an Algerian man who had a habit of standing mere inches from his face. "His spittle would get in my face," said Mr. Bringardner. But he did not back away. "If it were an American guy that close," he said, "it would have been a different situation."

Yet it is rare for people to have confrontations about personal space. "No one will ever turn to the nice person from Italy or Greece and say 'I like you but you're standing too close to me,' " said Dr. Archer, who has videotaped strangers' responses to personal-space violations.

Rather, they will likely angle and inch their bodies away from anyone they feel breached their buffer zone. Blood pressure may rise, the heart rate may go up and the palms may sweat, said David B. Givens, the director of the Center for Nonverbal Studies in Spokane, Wash. “All animals tend to have an aversion to being touched by a strange critter,” he said.

Proxemics, however, is not merely about interactions between individuals. On a larger scale, it helps developers, urban planners and executives in various industries understand how people move through public spaces, how they shop, even what type of restaurants they find most comfortable.

Paco Underhill, the author of “Why We Buy: The Science of Shopping” and the chief executive of Envirosell, a research and consulting company whose client list includes Bloomingdale’s, Saks Fifth Avenue, Starbucks and McDonald’s, discovered that most consumers will walk away from whatever they are looking at in a store if a customer inadvertently brushes against their backside, disturbing his or her personal space.

And so, what may seem like a minor behavioral tic can help department stores determine how far apart to place racks of clothes, bistro owners figure out how to configure the bar area and college campuses to design residence halls.

Yet there are paradoxes to personal space, and one is that people do not always want it.

“If you’ve gone to see a funny movie in an empty theater, you can appreciate the facilitative effects of the presence of others,” said Robert M. Krauss, a professor of psychology at Columbia. “We went to see ‘Borat’ and every seat in the theater was full, and I have no doubt that it enhanced our enjoyment of it.”

Being crowded in a dance club or running the New York City Marathon is far different from being packed into a train car during rush hour or stuck on a freeway (yes, proxemics has been linked to road rage).

“In these spaces, when you’re not commuting, you feel fine,” Dr. Givens said. But in both positive moments of closeness and those that make the blood boil, one tenet of proxemics is the same: the near presence of people is arousing. “It will enhance the amount that you enjoy things that are enjoyable,” Dr. Krauss said. “It will make more aversive the things that are not enjoyable.”

And when people want to avoid someone who is less than enjoyable, they employ a variety of tactics. Some scholars say this goes a long way toward explaining the iPod craze, which turns city streets and commuter trains into islands of individuality.

The same principle makes it easier to get close to strangers in low-lit places. “Visually, you’re not getting as much information,” Dr. Givens said, adding that if the lights were suddenly flipped on in a dim bar, “everybody would spring back.”

In general most people understand the rules of personal space and heed the cues. Then again, the world is littered with clods. As Dr. Archer put it, people generally view personal-space rules in one of two ways: “the wrong way and my way.”

The New York Times
nytimes.com

September 14, 2004

'Excuse Me. May I Have Your Seat?'

By MICHAEL LUO

Thirty years ago, they were wide-eyed, first-year graduate students, ordered by their iconoclastic professor, Dr. Stanley Milgram, to venture into the New York City subway to conduct an unusual experiment.

Their assignment: to board a crowded train and ask someone for a seat. Then do it again. And again.

"As a Bronxite, I knew, you don't do this," said Dr. Jacqueline Williams, now an assistant dean at Brooklyn College. Students jokingly asked their professor if he wanted to get them killed.

But Dr. Milgram was interested in exploring the web of unwritten rules that govern behavior underground, including the universally understood and seldom challenged first-come-first-served equity of subway seating. As it turned out, an astonishing percentage of riders - 68 percent when they were asked directly - got up willingly.

Quickly, however, the focus turned to the experimenters themselves. The seemingly simple assignment proved to be extremely difficult, even traumatic, for the students to carry out.

"It's something you can't really understand unless you've been there," said Dr. David Carraher, 55, now a senior scientist at a nonprofit group in Cambridge, Mass.

Dr. Kathryn Krogh, 58, a clinical psychologist in Arlington, Va., was more blunt: "I was afraid I was going to throw up."

More than three decades later, the memories are still surprisingly vivid, testimony perhaps to the trauma of their experience and an unintended postscript to a rare study on the delicate subway order.

Two weeks ago, a pair of reporters who set out to replicate the experiment struggled with similar inhibitions. The incredulous reactions they got from riders were the same as well. But they also stumbled upon convincing proof that New Yorkers have mellowed with time. The results were far from scientific, but, remarkably, 13 out of 15 people gave up their seats.

"Uh, O.K., " said one man, holding hands with his girlfriend, before getting up. "I've never heard that one before."

A construction worker sneered to a male reporter, "If you were a woman, then. . . ." He got up anyway.

Another woman, who sprang up from her seat, twice asked the reporter, who kept her eyes fixed on the ground, if she was O.K.

Dr. Milgram, who died in 1984 at age 51, got the idea for the experiment from a conversation with his mother-in-law, who complained to him one day that no one had offered her a seat on the subway. "It occurred to me: What would have happened had she asked for a seat?" he said in a 1974 interview in the magazine Psychology Today.

He suggested the experiment to one of his graduate student classes, but the students recoiled. Finally, one student, Ira Goodman, volunteered to try it with a partner. But instead of coming back after 20 trials as he had promised, he returned with only 14. When Dr. Milgram asked him what had happened, he said that it was just too difficult.

Dismissing his students' fears, Dr. Milgram set out to try it himself. But when he approached his first seated passenger, he found himself frozen.

"The words seemed lodged in my trachea and would simply not emerge," he said in the interview.

Retreating, he berated himself: 'What kind of craven coward are you?"

A few unsuccessful tries later, he managed to choke out a request.

"Taking the man's seat, I was overwhelmed by the need to behave in a way that would justify my request," he said. "My head sank between my knees, and I could feel my face blanching. I was not role-playing. I actually felt as if I were going to perish."

From his own discomfort, Dr. Milgram sensed import. He had garnered notoriety several years earlier for a series of experiments in which test subjects were asked to administer what they thought were powerful electric shocks to fellow students. A stunning number did, a revelation in the power of authority. But Dr. Milgram had developed a new interest in the psychology of urban life, especially in invisible social dictates that help maintain order but go largely unnoticed until they are violated.

The following semester, he asked 10 members of his class on experimental social psychology to complete the experiment. The students descended into the subway in teams of two for support, polling an even number of men and women, and within those groups, an even number of people who were under 40 years old and over 40 years old. While one person asked, the other acted as an observer. They were responsible for 14 trials each, and the questions were phrased in four different ways.

In the first version, the experimenter said simply: "Excuse me. May I have your seat?" Here, 41 riders were asked, and 68 percent of the time people gave up their seats or sidled over.

In one variation, the experimenter pretended his or her partner was a stranger and asked loudly: "Excuse me. Do you think it would be all right if I asked someone for a seat?" The partner was to feign confusion. After repeating the question, the experimenter turned to ask the subject. The percentage who agreed dropped to 42 percent.

In another variation, the experimenter, holding a paperback mystery novel, asked: "Excuse me. May I have your seat? I can't read my book standing up." With this request, the percentage fell to 38 percent.

The final method involved the experimenter handing a note with the seat request written on it to the rider. With this approach, the percentage held at about 50 percent.

Those tension-filled subway rides in the spring of 1972 are still easily recalled by many of Dr. Milgram's former students scattered across the country.

"I really did feel sick to my stomach," said Dr. Krogh, remembering her first attempt. "Afterwards, I thought, 'I wonder if that wasn't helpful because the person must have thought: "This person looks sick. She needs the seat." ' "

Dr. Carraher remembered leaning over and asking an elderly woman for her seat. The woman snapped: "If I were standing and you were sitting, I think it'd be very reasonable to ask you for your seat, but I'm not going to give you my seat."

The woman's neighbor, a man, was so embarrassed for Dr. Carraher that he immediately offered him his seat instead. Another man lectured him on his manners.

Dr. Maury Silver, 59, now a visiting professor at Yeshiva University, was only auditing the class at the time, so he refused to take part in the experiment. Later, he and another student of Dr. Milgram's, Dr. John Sabini, who went on to become the co-author of a paper on the experiment, were teaching a class together and asked their students to try the subway experiment themselves. Dr. Sabini, however, reminded his partner that he had skipped the experiment the first time around. Dr. Silver, who described himself as "one of the more embarrassable people on earth," resolved to try it at least once.

"I start to ask for the man's seat," he said. "Unfortunately, I turned so white and so faint, he jumps up and puts me in the seat."

Dr. Harold Takooshian, another former student, said he kept feeling there was something unethical in what he was doing, almost deceiving riders, so he developed a card that he would slip to them afterward that explained they had just participated in a psychology experiment. It also made the task slightly easier.

Now a professor at Fordham University, he said the experiment showed him how potentially explosive the cramped confines can be.

"Milgram's idea exposed the extremely strong emotions that lie beneath the surface," he said. "You have all these strangers together. That study showed how much the rules are saving us from chaos."

As for why door blockers, pole huggers and other egregious violators of subway etiquette do not experience the

same opprobrium, perhaps another study is in order.

Lecture 18
Moral Reasoning

Continuing on our theme set in Lecture 17--decisions we make with respect to other people--today we turn to a second domain of what we might call "social" decision-making: moral reasoning.

Modern ideas on morality and moral behavior go back thousands of years to the ancient Greeks, who established the long-held notion that moral thinking is all based on dispassionate reasoning and logic. What we learn in the first article for today, *The End of Philosophy*, is that we may have been somewhat wrong about this all these years.

Instead, what cognitive neuroscience has been showing is that our sense of social morality––or sense of what is right and wrong with respect to other people––is strongly bound up in our emotions. In other words, we don't necessarily think and dwell and reason on many of the social-moral issues that confront us. Rather, we make quick, intuitive judgments that are driven by our emotions.

This idea strongly echoes the notion of "gut reactions" we considered back in Part 2 of the course, when making judgments and decisions about things.

In the second article for today, *Denial Makes the World Go Round*, we turn to a slightly different aspect of social moral behavior. In particular, we focus on the idea of how we humans often deviate from "moral" behavior and how this can actually support or aide our social cohesiveness. In essence, we all seem to have a built in capacity to bend social-moral rules to a certain small degree.

The New York Times

April 7, 2009

OP-ED COLUMNIST

The End of Philosophy

By DAVID BROOKS

Socrates talked. The assumption behind his approach to philosophy, and the approaches of millions of people since, is that moral thinking is mostly a matter of reason and deliberation: Think through moral problems. Find a just principle. Apply it.

One problem with this kind of approach to morality, as Michael Gazzaniga writes in his 2008 book, "Human," is that "it has been hard to find any correlation between moral reasoning and proactive moral behavior, such as helping other people. In fact, in most studies, none has been found."

Today, many psychologists, cognitive scientists and even philosophers embrace a different view of morality. In this view, moral thinking is more like aesthetics. As we look around the world, we are constantly evaluating what we see. Seeing and evaluating are not two separate processes. They are linked and basically simultaneous.

As Steven Quartz of the California Institute of Technology said during a recent discussion of ethics sponsored by the John Templeton Foundation, "Our brain is computing value at every fraction of a second. Everything that we look at, we form an implicit preference. Some of those make it into our awareness; some of them remain at the level of our unconscious, but ... what our brain is for, what our brain has evolved for, is to find what is of value in our environment."

Think of what happens when you put a new food into your mouth. You don't have to decide if it's disgusting. You just know. You don't have to decide if a landscape is beautiful. You just know.

Moral judgments are like that. They are rapid intuitive decisions and involve the emotion-processing parts of the brain. Most of us make snap moral judgments about what feels fair or not, or what feels good or not. We start doing this when we are babies, before we have language. And even as adults, we often can't explain to ourselves why something feels wrong.

In other words, reasoning comes later and is often guided by the emotions that preceded it. Or as Jonathan Haidt of the University of Virginia memorably wrote, "The emotions are, in fact, in charge of the temple of morality, and ... moral reasoning is really just a servant masquerading as a high priest."

The question then becomes: What shapes moral emotions in the first place? The answer has long been evolution, but in recent years there's an increasing appreciation that evolution isn't just about competition. It's also about cooperation within groups. Like bees, humans have long lived or died based on their ability to divide labor, help each other and stand together in the face of common threats. Many of our moral emotions and intuitions reflect that history. We don't just care about our individual rights, or even the rights of other individuals. We also care about loyalty, respect, traditions, religions. We are all the descendents of successful cooperators.

The first nice thing about this evolutionary approach to morality is that it emphasizes the social nature of moral intuition. People are not discrete units coolly formulating moral arguments. They link themselves together into communities and networks of mutual influence.

The second nice thing is that it entails a warmer view of human nature. Evolution is always about competition, but for humans, as Darwin speculated, competition among groups has turned us into pretty cooperative, empathetic and altruistic creatures — at least within our families, groups and sometimes nations.

The third nice thing is that it explains the haphazard way most of us lead our lives without destroying dignity and choice. Moral intuitions have primacy, Haidt argues, but they are not dictators. There are times, often the most important moments in our lives, when in fact we do use reason to override moral intuitions, and often those reasons — along with new intuitions — come from our friends.

The rise and now dominance of this emotional approach to morality is an epochal change. It challenges all sorts of traditions. It challenges the bookish way philosophy is conceived by most people. It challenges the Talmudic tradition, with its hyper-rational scrutiny of texts. It challenges the new atheists, who see themselves involved in a war of reason against faith and who have an unwarranted faith in the power of pure reason and in the purity of their own reasoning.

Finally, it should also challenge the very scientists who study morality. They're good at explaining how people make judgments about harm and fairness, but they still struggle to explain the feelings of awe, transcendence, patriotism, joy and self-sacrifice, which are not ancillary to most people's moral experiences, but central. The evolutionary approach also leads many scientists to neglect the concept of individual responsibility and makes it hard for them to appreciate that most people struggle toward goodness, not as a means, but as an end in itself.

Bob Herbert is off today.

November 20, 2007

Denial Makes the World Go Round

By BENEDICT CAREY

Correction Appended

For years she hid the credit card bills from her husband: The $2,500 embroidered coat from Neiman Marcus. The $900 beaded scarf from Blake in Chicago. A $600 pair of Dries van Noten boots. All beautiful items, and all perfectly affordable if she had been a hedge fund manager or a Google executive.

Friends at first dropped hints to go easy or rechannel her creative instincts. Her mother grew concerned enough to ask pointed questions. But sales clerks kept calling with early tips on the coming season's fashions, and the seasons kept changing.

"It got so bad I would sit up suddenly at night and wonder if I was going to slip up and this whole thing would explode," said the secretive shopper, Katharine Farrington, 46, a freelance film writer living in Washington, who is now free of debt. "I don't know how I could have been in denial about it for so long. I guess I was optimistic I could pay, and that I wasn't hurting anyone.

"Well, of course that wasn't true."

Everyone is in denial about something; just try denying it and watch friends make a list. For Freud, denial was a defense against external realities that threaten the ego, and many psychologists today would argue that it can be a protective defense in the face of unbearable news, like a cancer diagnosis.

In the modern vernacular, to say someone is "in denial" is to deliver a savage combination punch: one shot to the belly for the cheating or drinking or bad behavior, and another slap to the head for the cowardly self-deception of pretending it's not a problem.

Yet recent studies from fields as diverse as psychology and anthropology suggest that the ability to look the other way, while potentially destructive, is also critically important to forming and nourishing close relationships. The psychological tricks that people use to ignore a festering problem in their own households are the same ones that they need to live with everyday human dishonesty and betrayal, their own and others'. And it is these highly evolved abilities, research suggests, that provide the foundation for that most disarming of all human invitations, forgiveness.

In this emerging view, social scientists see denial on a broader spectrum — from benign inattention to passive acknowledgment to full-blown, willful blindness — on the part of couples, social groups and organizations, as well as individuals. Seeing denial in this way, some scientists argue, helps clarify when it is wise to manage a difficult person or personal situation, and when it threatens to become a kind of infectious silent trance that can make hypocrites of otherwise forthright people.

"The closer you look, the more clearly you see that denial is part of the uneasy bargain we strike to be social creatures," said Michael McCullough, a psychologist at the University of Miami and the author of the coming book "Beyond Revenge: The Evolution of the Forgiveness Instinct." "We really do want to be moral people, but the fact is that we cut corners to get individual advantage, and we rely on the room that denial gives us to get by,

to wiggle out of speeding tickets, and to forgive others for doing the same."

The capacity for denial appears to have evolved in part to offset early humans' hypersensitivity to violations of trust. In small kin groups, identifying liars and two-faced cheats was a matter of survival. A few bad rumors could mean a loss of status or even expulsion from the group, a death sentence.

In a series of recent studies, a team of researchers led by Peter H. Kim of the University of Southern California and Donald L. Ferrin of the University of Buffalo, now at Singapore Management University, had groups of business students rate the trustworthiness of a job applicant after learning that the person had committed an infraction at a previous job. Participants watched a film of a job interview in which the applicant was confronted with the problem and either denied or apologized for it.

If the infraction was described as a mistake and the applicant apologized, viewers gave him the benefit of the doubt and said they would trust him with job responsibilities. But if the infraction was described as fraud and the person apologized, viewers' trust evaporated — and even having evidence that he had been cleared of misconduct did not entirely restore that trust.

"We concluded there is this skewed incentive system," Dr. Kim said. "If you are guilty of an integrity-based violation and you apologize, that hurts you more than if you are dishonest and deny it."

The system is skewed precisely because the people we rely on and value are imperfect, like everyone else, and not nearly as moral or trustworthy as they expect others to be. If evidence of this weren't abundant enough in everyday life, it came through sharply in a recent study led by Dan Ariely, a behavioral economist at the Massachusetts Institute of Technology.

Dr. Ariely and two colleagues, Nina Mazar and On Amir, had 326 students take a multiple-choice general knowledge test, promising them payment for every correct answer. The students were instructed to transfer their answers, for the official tally, onto a form with color-in bubbles for each numbered question. But some of the students had the opportunity to cheat: they received bubble sheets with the correct answers seemingly inadvertently shaded in gray. Compared with the others, they changed about 20 percent of their answers, and a follow-up study demonstrated that they were unaware of the magnitude of their dishonesty.

"What we concluded is that good people can be dishonest up to the level where conscience kicks in," said Dr. Ariely, author of the book "Predictably Irrational: The Hidden Forces that Shape Our Decisions," due out next year. "That essentially you can fool the conscience a little bit and make small transgressions without waking it up. It all goes under the radar because you are not paying that much attention."

It is a mistake to underestimate the power of simple attention. People can be acutely aware of what they pay attention to and remarkably blind to what they do not, psychologists have found. In real life, to be sure, casual denials of bad behavior require more than simple mental gymnastics, but inattention is a basic first ingredient.

The second ingredient, or second level, is passive acknowledgment, when infractions are too persistent to go unnoticed. People have adapted a multitude of ways to handle such problems indirectly. A raised eyebrow, a half smile or a nod can signal both "I saw that" and "I'll let this one pass."

The acknowledgment is passive for good reasons: an open confrontation, with a loved one or oneself, risks a major rupture or life change that could be more dire than the offense. And more often than is assumed, a subtle gesture can be enough of a warning to trigger a change in behavior, even one's own.

In an effort to calculate exactly how often people overlook or punish infractions within their peer groups, a team of anthropologists from New Mexico and Vancouver ran a simulation of a game to measure levels of cooperation. In this one-on-one game, players decide whether to contribute to a shared investment pool, and they can cut off

their partner if they believe that player's contributions are too meager. The researchers found that once players had an established relationship of trust based on many interactions — once, in effect, the two joined the same clique — they were willing to overlook four or five selfish violations in a row without cutting a friend off. They cut strangers off after a single violation.

Using a computer program, the anthropologists ran out the simulation over many generations, in effect speeding up the tape of evolution for this society of players. And the rate of overlooking trust violations held up; that is, this pattern of forgiving behavior defined stable groups that maximized the survival and evolutionary fitness of the individuals.

"There are lots of way to think about this," said the lead author, Daniel J. Hruschka of the Santa Fe Institute, a research group that focuses on complex systems. "One is that you're moving and you really need help, but your friend doesn't return your call. Well, maybe he's out of town, and it's not a defection at all. The ability to overlook or forgive is a way to overcome these vicissitudes of everyday life."

Nowhere do people use denial skills to greater effect than with a spouse or partner. In a series of studies, Sandra Murray of the University of Buffalo and John Holmes of the University of Waterloo in Ontario have shown that people often idealize their partners, overestimating their strengths and playing down their flaws.

This typically involves a blend of denial and touch-up work — seeing jealousy as passion, for instance, or stubbornness as a strong sense of right and wrong. But the studies have found that partners who idealize each other in this way are more likely to stay together and to report being satisfied in the relationship than those who do not.

"The evidence suggests that if you see the other person in this idealized way, and treat them accordingly, they begin to see themselves that way, too," Dr. Murray said. "It draws out these more positive behaviors."

Faced with the high odor of real perfidy, people unwilling to risk a break skew their perception of reality much more purposefully. One common way to do this is to recast clear moral breaches as foul-ups, stumbles or lapses in competence — because those are more tolerable, said Dr. Kim, of U.S.C. In effect, Dr. Kim said, people "reframe the ethical violation as a competence violation."

She wasn't cheating on him — she strayed. He didn't hide the losses in the subprime mortgage unit for years — he miscalculated.

This active recasting of events, built on the same smaller-bore psychological tools of inattention and passive acknowledgment, is the point at which relationship repair can begin to shade into willful self-deception of the kind that takes on a life of its own. Everyone knows what this looks like: You can't talk about the affair, and you can't talk about not talking about it. Soon, you can't talk about any subject that's remotely related to it.

And the unstated social expectations out in the world often reinforce the conspiracy, no matter its source, said Eviatar Zerubavel, a sociologist at Rutgers and the author of "The Elephant in the Room: Silence and Denial in Everyday Life."

"Tact, decorum, politeness, taboo — they all limit what can be said in social domains," he said. "I have never seen tact and taboo discussed in the same context, but one is just a hard version of the other, and it's not clear where people draw the line between their private concerns and these social limits."

In short, social mores often work to shrink the space in which a conspiracy of silence can be broken: not at work, not out here in public, not around the dinner table, not here. It takes an outside crisis to break the denial, and no one needs a psychological study to know how that ends.

In Ms. Farrington's case, the event was a move out of the country for her husband's job. Unable to earn much money from her own work, she kept buying but had no way to cover the credit card payments.

"Basically," she said, "I had to fess up. It was terrible, but I fessed up to my husband, I fessed up to my mother and to another friend who was getting the bills while I was away. This whole web of intrigue, and in the end it just had to crash." She now hunts for better bargains on eBay.

Correction: November 28, 2007

An article in Science Times on Nov. 20 about the role of denial in nourishing close relationships misstated the title of a book. It is "Predictably Irrational: The Hidden Forces That Shape Our Decisions," not "Hidden *Forced*."

Lecture 19
Social Emotions

We first talked about emotions back in Lecture 5 in regard to visual threat responses, and then in Lecture 18, with respect to moral reasoning. In Lecture 19 we again consider emotions, but this time in relation to the emotions we convey to others non-verbally, and the emotions we feel about others

The former idea is captured in the first article for today, *E-Mail is Easy to Write (and to Misread)*, focuses on the various emotional responses we automatically pick up in people when conversing with them, emotional cues that are critical for normal communication. The specific nature of these emotional cues are highlighted in the article by discussing how they are specifically absent in emails, and how this contributes to the miscommunication problems all too typical of email.

In lecture we'll also look at how these kinds of emotional cues can be "contagious", in that other peoples' moods affect us and visa versa.

The second article for today, *In Pain and Joy of Envy, the Brain May Play a Role*, then turns to an example of an emotion that we feel with respect to other people––envy.

Of interest here is recent research demonstrating how our basic responses of pleasure and pain appear to underlay our sense of envy. When we feel the sting of envy, we are literally having a pain response in our brains, and when we feel happy at someone else's problems (think of a politician or athlete you love to hate failing in an election or big game), it's tied to activations in the pleasure centers of our brains.

The New York Times
nytimes.com

October 7, 2007

PREOCCUPATIONS

E-Mail Is Easy to Write (and to Misread)

By DANIEL GOLEMAN

AS I was in the final throes of getting my most recent book into print, an employee at the publishing company sent me an e-mail message that stopped me in my tracks.

I had met her just once, at a meeting. We were having an e-mail exchange about some crucial detail involving publishing rights, which I thought was being worked out well. Then she wrote: “It’s difficult to have this conversation by e-mail. I sound strident and you sound exasperated.”

At first I was surprised to hear I had sounded exasperated. But once she identified this snag in our communications, I realized that something had really been off. So we had a phone call that cleared everything up in a few minutes, ending on a friendly note.

The advantage of a phone call or a drop-by over e-mail is clearly greatest when there is trouble at hand. But there are ways in which e-mail may subtly encourage such trouble in the first place.

This is becoming more apparent with the emergence of social neuroscience, the study of what happens in the brains of people as they interact. New findings have uncovered a design flaw at the interface where the brain encounters a computer screen: there are no online channels for the multiple signals the brain uses to calibrate emotions.

Face-to-face interaction, by contrast, is information-rich. We interpret what people say to us not only from their tone and facial expressions, but also from their body language and pacing, as well as their synchronization with what we do and say.

Most crucially, the brain’s social circuitry mimics in our neurons what’s happening in the other person’s brain, keeping us on the same wavelength emotionally. This neural dance creates an instant rapport that arises from an enormous number of parallel information processors, all working instantaneously and out of our awareness.

In contrast to a phone call or talking in person, e-mail can be emotionally impoverished when it comes to nonverbal messages that add nuance and valence to our words. The typed words are denuded of the rich emotional context we convey in person or over the phone.

E-mail, of course, has a multitude of virtues: it’s quick and convenient, democratizes access and lets us stay in touch with loads of people we could never see or call. It enables us to accomplish huge amounts of work together.

Still, if we rely solely on e-mail at work, the absence of a channel for the brain’s emotional circuitry carries risks. In an article to be published next year in the Academy of Management Review, Kristin Byron, an assistant professor of management at Syracuse University’s Whitman School of Management, finds that e-mail generally increases the likelihood of conflict and miscommunication.

One reason for this is that we tend to misinterpret positive e-mail messages as more neutral, and neutral ones as more negative, than the sender intended. Even jokes are rated as less funny by recipients than by senders.

We fail to realize this largely because of egocentricity, according to a 2005 article in the Journal of Personality and Social Psychology. Sitting

alone in a cubicle or basement writing e-mail, the sender internally "hears" emotional overtones, though none of these cues will be sensed by the recipient.

When we talk, my brain's social radar picks up that hint of stridency in your voice and automatically lowers my own tone of exasperation, all in the service of working things out. But when we send e-mail, there's little to nothing by way of emotional valence to pick up. E-mail lacks those channels for the implicit meta-messages that, in a conversation, provide its positive or negative spin.

On the upside, the familiarity that develops between sender and receiver can help to reduce these problems, according to findings by Joseph Walther, a professor of communication and telecommunication at Michigan State University. People who know each other well, it turns out, are less likely to have these misunderstandings online.

These quirks of cyberpsychology are familiar to Clay Shirky, an adjunct professor in New York University's interactive telecommunications program. His expertise is social computing — software programs through which multiple users interact, ranging from Facebook to Listservs and chat rooms to e-mail. I asked Professor Shirky what all of this might imply for the multitudes of people who work with others by e-mail.

"When you communicate with a group you only know through electronic channels, it's like having functional Asperger's Syndrome — you are very logical and rational, but emotionally brittle," Professor Shirky said.

"I'm part of a far-flung distributed network that at one point was designing a piece of software for sharing medical data; we worked mostly by conference calls and e-mail, and it was going nowhere. So we finally said we'd all fly to Boston and get together for two days, just sit in a room and hash it out."

During that meeting, the team got an enormous amount of work done. And, Professor Shirky recalls, "because the synchronization by e-mail was so much better after the face-to-face piece, we actually hit the launch date."

He proposes that work groups whose members are widely dispersed but need to have high levels of coordination — say, a computer security team protecting a global bank — do not have to assemble everyone in one room to reap the same benefit. Instead, he suggests a "banyan model," after the Asian tree that puts down roots from its branches.

In this approach, he said, "you put down little roots of face-to-face contact everywhere, to strategically augment electronic communications."

Professor Shirky advised the I.T. head of a global bank to gather together one representative from disparate cities for a day or two and complete tasks. That way, when the security group in Singapore gets e-mail from the security people in London, someone will be more likely to know the sender, and sense how to read the information with less risk of misconstruing or discounting it.

CONSIDER, too, the "e-mail the guy down the hall" effect: as the use of e-mail increases in an organization, the overall volume of other kinds of communication drops — particularly routine friendly greetings. But lacking these seemingly innocuous interactions, people feel more disconnected from co-workers. This was noted in an article in Organizational Science almost a decade ago, just as e-mail was starting to surge. Saying "Hi," it turns out, really does matter; it's social glue.

As Professor Shirky puts it, "social software" like e-mail "is not better than face-to-face contact; it's only better than nothing."

Daniel Goleman is the author of "Social Intelligence: The New Science of Human Relationships" (Bantam). E-mail: preoccupations@nytimes.com.

February 17, 2009

BASICS

In Pain and Joy of Envy, the Brain May Play a Role

By NATALIE ANGIER

Most human vices have enough sense to be very, very tempting. Lust, gluttony, sloth, hurling powerful if unimaginative expletives at a member of the political opposition, buying a pair of Thierry Rabotin snakeskin printed shoes at 25 percent off even though you just bought a pair of cherry-red slingbacks last week — all these things feel awfully good to indulge in, which is why people must be repeatedly abjured not to.

One vice, however, dispenses with any hedonic trappings and instead feels so painful you would think it was a virtue, except that there's no gain in lean muscle mass at the end: envy. Skulking at sixth place on traditional lists of the seven deadly sins, right between wrath and pride, envy is the deep, often hostile resentment you feel toward somebody who has something you want, like wealth, beauty, a promotion or the admiration of peers. It is a vice few can avoid yet nobody craves, for to experience envy is to feel small and inferior, a loser shrink-wrapped in spite.

"Envy is corrosive and ugly, and it can ruin your life," said Richard H. Smith, a professor of psychology at the University of Kentucky who has written about envy. "If you're an envious person, you have a hard time appreciating a lot of the good things that are out there, because you're too busy worrying about how they reflect on the self."

Now researchers are gleaning insights into the neural and evolutionary underpinnings of envy, and why it can feel like a bodily illness or a physical blow. They're also tracing the pathway of envy's equally petty foil, the sensation of schadenfreude — taking pleasure when those whom you envied are themselves brought down low.

Reporting in the current issue of the journal Science, researchers at the National Institute of Radiological Sciences in Japan and their colleagues described brain-scanning studies of subjects who were told to imagine themselves as protagonists in social dramas with characters of greater or lesser status or achievement. When confronting characters that the participants admitted to envying, brain regions involved in registering physical pain were aroused: the higher the subjects rated their envy, the more vigorously flared the pain nodes in the brain's dorsal anterior cingulate cortex and related areas.

Conversely, the researchers said, when subjects were given a chance to imagine the golden one's downfall, the brain's reward circuits were activated, again in proportion to the strength of envy's sting: the subjects who felt the greatest envy the first time around reacted to news of their rival's misfortune with a comparatively livelier response in the dopamine-rich pleasure centers of, for example, the ventral striatum. "We have a saying in Japanese, 'The misfortunes of others are the taste of honey,' " said Hidehiko Takahashi, the first author on the report. "The ventral striatum is processing that 'honey.' "

Matthew D. Lieberman of the psychology department at the University of California, Los Angeles, who co-wrote a commentary that accompanies the report, said he was impressed by how the neural correlates of envy and schadenfreude were tied together, with the magnitude of one predicting the strength of the other. "This is the way other needs-processing systems like hunger and thirst work," he said. "The hungrier or thirstier that you feel, the more pleasurable it is when you finally eat or drink."

The new findings are preliminary, and some scientists have expressed reservations about what they or other scanning results from

the fast-moving field of behavioral neuroscience really mean. Nevertheless, the research throws a spotlight on a potent emotion that we deny or deride but ignore at our peril. Much of the recent economic crisis, Dr. Smith suggested, may well have been fueled by runaway envy, as financiers competed to avoid the shame of being a "mere" millionaire.

Envy can be seen in other social animals with personal reputations to defend. Frans de Waal of the Yerkes National Primate Research Center in Atlanta noted that monkeys were perfectly happy to work for cucumber slices until a person started giving one monkey a preferred treat like grapes. Then the others stopped working for cucumbers and started nursing a grudge. "The underlying emotion is likely envy or resentment," Dr. de Waal said.

When children realize they have siblings, their lives become dominated by the calipers of envy. Why does she always get to sit by the window? His cupcake has more sprinkles! No siblings? No problem: you can envy the cat.

Researchers often distinguish between envy and the jealousy you feel by, say, seeing a loved one flirt at a party. Jealousy is a triangle, Dr. Smith said, in which you fear losing a loved one to the embrace of another. Envy is a two-bodied affair, an arrow proceeding from your covetous breast to the heart of the well-endowed Other. Yet envy is restless and gregarious and can embrace popular cliques, honor rolls and entire nation-states. "It's a fact of life that we pay close attention to status, to who's doing well and who isn't and how we stand in comparison to others," said Colin W. Leach, an associate professor of psychology at the University of Connecticut, in Storrs, who studies envy.

As a rule, we envy those who are like us in most ways — in sex, age, class and curriculum vitae. Potters envy potters, Aristotle observed.

Paradoxically, this most socially driven of emotions is among the least socially acceptable to confess to. Jealous hostility toward a romantic rival is an acceptable topic for conversation. Envious hostility toward a professional rival is more like an embarrassing body function: please do not share. When asked by researchers about their envy, study participants have said, "I'm privately ashamed of myself."

As evolutionary scientists see it, envy's salient features — its persistence and universality, its fixation with social status and the fact that it cohabits with shame — suggest that it serves a deep social role. They propose that our invidious impulses may help explain why humans are comparatively less hierarchical than many primate species, more prone to a rough egalitarianism and to rebelling against kings and tycoons who hog more than their fair share.

Envy may also help keep us in line, making us so desperate to look good that we take the high road and start to act good, too. We struggle with our private envy, our longing for more esteem than we command, and the struggle only sharpens the painful contrast between the imagined perfection of the envied adversary that we have enshrined on an imaginary throne, and the defective merchandise that is ourselves.

"If you desire glory, you may envy Napoleon," Bertrand Russell said. "But Napoleon envied Caesar, Caesar envied Alexander, and Alexander, I daresay, envied Hercules, who never existed." If envy is a tax levied by civilization, it is one that everyone must pay.

Lecture 20
Reading Minds

In Lecture 19 we considered some of the basic emotions underlying social interactions. Now in Lecture 20 we turn to an equally vital topic for understanding how we think about and deal with others––reading the minds (or intentions) of others.

Specifically, to what extent do we accurately pick up on someone else's goals, motives and reasons for what they do and say, and what is it that we actually use to make these inferences and judgments?

In the first article for today, *The Science of Sarcasm (Not That You Care)*, we learn about recent neuroimaging work linking our understanding of sarcasm to the right parahippocampal gyrus. Of interest here is not so much the brain area per se, but the notion of the "paralinguistic cues" we use to figure out that what the person means in a sarcastic statement is precisely the opposite of what is actually being said.

In the second article for today, *A Highly Evolved Propensity for Deceit,* we view the idea of reading intentions from a very different perspective--why is it that we're actually pretty bad at detecting when others are lying or being deceitful to us? One idea here is that there can be a social benefit to many forms of lying/deceit, in that sometimes we're happier not knowing the truth.

In class, we will introduce the idea of what is called "mental state decoding", look at the brain system involved, and how our ability to "decode" the mental states of others has a strong cultural component.

The New York Times
nytimes.com

June 3, 2008

The Science of Sarcasm (Not That You Care)

By DAN HURLEY

There was nothing very interesting in Katherine P. Rankin's study of sarcasm — at least, nothing worth your important time. All she did was use an M.R.I. to find the place in the brain where the ability to detect sarcasm resides. But then, you probably already knew it was in the right parahippocampal gyrus.

What you may not have realized is that perceiving sarcasm, the smirking put-down that buries its barb by stating the opposite, requires a nifty mental trick that lies at the heart of social relations: figuring out what others are thinking. Those who lose the ability, whether through a head injury or the frontotemporal dementias afflicting the patients in Dr. Rankin's study, just do not get it when someone says during a hurricane, "Nice weather we're having."

"A lot of the social cognition we take for granted and learn through childhood, the ability to appreciate that someone else is being ironic or sarcastic or angry — the so-called theory of mind that allows us to get inside someone else's head — is characteristically lost very early in the course of frontotemporal dementia," said Dr. Bradley F. Boeve, a behavioral neurologist at the Mayo Clinic in Rochester, Minn.

"It's very disturbing for family members, but neurologists haven't had good tools for measuring it," he went on. "That's why I found this study by Kate Rankin and her group so fascinating."

Dr. Rankin, a neuropsychologist and assistant professor in the Memory and Aging Center at the University of California, San Francisco, used an innovative test developed in 2002, the Awareness of Social Inference Test, or Tasit. It incorporates videotaped examples of exchanges in which a person's words seem straightforward enough on paper, but are delivered in a sarcastic style so ridiculously obvious to the able-brained that they seem lifted from a sitcom.

"I was testing people's ability to detect sarcasm based entirely on paralinguistic cues, the manner of expression," Dr. Rankin said.

In one videotaped exchange, a man walks into the room of a colleague named Ruth to tell her that he cannot take a class of hers that he had previously promised to take. "Don't be silly, you shouldn't feel bad about it," she replies, hitting the kind of high and low registers of a voice usually reserved for talking to toddlers. "I know you're busy — it probably wasn't fair to expect you to squeeze it in," she says, her lips curled in derision.

Although people with mild Alzheimer's disease perceived the sarcasm as well as anyone, it went over the heads of many of those with semantic dementia, a progressive brain disease in which people forget words and their meanings.

"You would think that because they lose language, they would pay close attention to the paralinguistic elements of the communication," Dr. Rankin said.

To her surprise, though, the magnetic resonance scans revealed that the part of the brain lost among those who failed to perceive sarcasm was not in the left hemisphere of the brain, which specializes in language and social interactions, but in a part of the right hemisphere previously identified as important only to detecting contextual background changes in visual tests.

"The right parahippocampal gyrus must be involved in detecting more than just visual context — it perceives social context as well," Dr. Rankin said.

The discovery fits with an increasingly nuanced view of the right hemisphere's role, said Dr. Anjan Chatterjee, an associate professor in the Center for Cognitive Neuroscience at the University of Pennsylvania.

"The left hemisphere does language in the narrow sense, understanding of individual words and sentences," Dr. Chatterjee said. "But it's now thought that the appreciation of humor and language that is not literal, puns and jokes, requires the right hemisphere."

Dr. Boeve, at the Mayo Clinic, said that beyond the curiosity factor of mapping the cognitive tasks of the brain's ridges and furrows, the study offered hope that a test like Tasit could help in the diagnosis of frontotemporal dementia.

"These people normally do perfectly well on traditional neuropsychological tests early in the course of their disease," he said. "The family will say the person has changed dramatically, but even neurologists will often just shrug them off as having a midlife crisis."

Short of giving such a test, he said, the best way to diagnose such problems is by talking with family members about how the person has changed over time.

After a presentation of her findings at the American Academy of Neurology's annual meeting in April, Dr. Rankin was asked whether even those with intact brains might have differences in brain areas that explain how well they pick up on sarcasm.

"We all have strengths and weaknesses in our cognitive abilities, including our ability to detect social cues," she said. "There may be volume-based differences in certain regions that explain variations in all sorts of cognitive abilities."

So is it possible that Jon Stewart, who wields sarcasm like a machete on "The Daily Show," has an unusually large right parahippocampal gyrus?

"His is probably just normal," Dr. Rankin said. "The right parahippocampal gyrus is involved in detecting sarcasm, not being sarcastic."

But, she quickly added, "I bet Jon Stewart has a huge right frontal lobe; that's where the sense of humor is detected on M.R.I."

A spokesman for Mr. Stewart said he would have no comment — not that a big-shot television star like Jon Stewart would care about the size of his neuroanatomy.

The New York Times
nytimes.com

December 23, 2008

BASICS

A Highly Evolved Propensity for Deceit

By NATALIE ANGIER

When considering the behavior of putative scam operators like Bernard "Ponzi scheme" Madoff or Rod "Potty Mouth" Blagojevich, feel free to express a sense of outrage, indignation, disgust, despair, amusement, schadenfreude. But surprise? Don't make me laugh.

Sure, Mr. Madoff may have bilked his clients of $50 billion, and Governor Blagojevich, of Illinois, stands accused of seeking personal gain through the illicit sale of public property — a United States Senate seat. Yet while the scale of their maneuvers may have been exceptional, their apparent willingness to lie, cheat, bluff and deceive most emphatically was not.

Deceitful behavior has a long and storied history in the evolution of social life, and the more sophisticated the animal, it seems, the more commonplace the con games, the more cunning their contours.

In a comparative survey of primate behavior, Richard Byrne and Nadia Corp of the University of St. Andrews in Scotland found a direct relationship between sneakiness and brain size. The larger the average volume of a primate species' neocortex — the newest, "highest" region of the brain — the greater the chance that the monkey or ape would pull a stunt like this one described in The New Scientist: a young baboon being chased by an enraged mother intent on punishment suddenly stopped in midpursuit, stood up and began scanning the horizon intently, an act that conveniently distracted the entire baboon troop into preparing for nonexistent intruders.

Much evidence suggests that we humans, with our densely corrugated neocortex, lie to one another chronically and with aplomb. Investigating what they called "lying in day-to-day life," Bella DePaulo, now a visiting professor of psychology at the University of California, Santa Barbara, and her colleagues asked 77 college students and 70 people from the community to keep anonymous diaries for a week and to note the hows and whys of every lie they told.

Tallying the results, the researchers found that the college students told an average of two lies a day, community members one a day, and that most of the lies fell into the minor fib category. "I told him I missed him and thought about him every day when I really don't think about him at all," wrote one participant. "Said I sent the check this morning," wrote another.

In a follow-up study, the researchers asked participants to describe the worst lies they'd ever told, and then out came confessions of adultery, of defrauding an employer, of lying on a witness stand to protect an employer. When asked how they felt about their lies, many described being haunted with guilt, but others confessed that once they realized they'd gotten away with a whopper, why, they did it again, and again.

In truth, it's all too easy to lie. In more than 100 studies, researchers have asked participants questions like, Is the person on the videotape lying or telling the truth? Subjects guess correctly about 54 percent of the time, which is barely better than they'd do by

flipping a coin. Our lie blindness suggests to some researchers a human desire to be deceived, a preference for the stylishly accoutred fable over the naked truth.

"There's a counterintuitive motivation not to detect lies, or we would have become much better at it," said Angela Crossman, an assistant professor of psychology at the John Jay College of Criminal Justice. "But you may not really want to know that the dinner you just cooked stinks, or even that your spouse is cheating on you."

The natural world is rife with humbug and fish tales, of things not being what they seem. Harmless viceroy butterflies mimic toxic monarch butterflies, parent birds draw predators away from the nest by feigning a broken wing, angler fish lure prey with appendages that wiggle like worms.

Biologists distinguish between such cases of innate or automatic deception, however, and so-called tactical deception, the use of a normal behavior in a novel situation, with the express purpose of misleading an observer. Tactical deception requires considerable behavioral suppleness, which is why it's most often observed in the brainiest animals.

Great apes, for example, make great fakers. Frans B. M. de Waal, a professor at the Yerkes National Primate Research Center and Emory University, said chimpanzees or orangutans in captivity sometimes tried to lure human strangers over to their enclosure by holding out a piece of straw while putting on their friendliest face.

"People think, Oh, he likes me, and they approach," Dr. de Waal said. "And before you know it, the ape has grabbed their ankle and is closing in for the bite. It's a very dangerous situation."

Apes wouldn't try this on their own kind. "They know each other too well to get away with it," Dr. de Waal said. "Holding out a straw with a sweet face is such a cheap trick, only a naïve human would fall for it."

Apes do try to deceive one another. Chimpanzees grin when they're nervous, and when rival adult males approach each other, they sometimes take a moment to turn away and close their grins with their hands. Similarly, should a young male be courting a female and spot the alpha male nearby, the subordinate chimpanzee will instantly try to cloak his amorous intentions by dropping his hands over his erection.

Rhesus monkeys are also artful dodgers. "There's a long set of studies showing that the monkeys are very good at stealing from us," said Laurie R. Santos, an associate professor of psychology at Yale University.

Reporting recently in Animal Behavior, Dr. Santos and her colleagues also showed that, after watching food being placed in two different boxes, one with merrily jingling bells on the lid and the other with bells from which the clappers had been removed, rhesus monkeys preferentially stole from the box with the silenced bells. "We've been hard-pressed to come up with an explanation that's not mentalistic," Dr. Santos said. "The monkeys have to make a generalization — I can hear these things, so they, the humans, can, too."

One safe generalization seems to be that humans are real suckers. After dolphin trainers at the Institute for Marine Mammals Studies in Mississippi had taught the dolphins to clean the pools of trash by rewarding the mammals with a fish for every haul they brought in, one female dolphin figured out how to hide trash under a rock at the bottom of the pool and bring it up to the trainers one small piece at a time.

We're desperate to believe that what our loved ones say is true. And now we find otherwise. Oh, Flipper, et tu?

Lecture 21
Mind Blindness

Up to this point in Part 3 of the course we have considered various cognitive aspects of how we react and respond to others. Today we highlight these social abilities by examining what happens when they are under-developed or missing in individuals--a problem that has been called "mindblindness."

The one article, *Finding Out: Adults and Autism; An Answer, but Not a Cure, for a Social Disorder*, raises several key points in this regard. For one, it introduces us to *Asperger's syndrome*, a genetically-related condition wherein people tend to behave in socially awkward ways. For another, it discusses the "hidden curriculum", or the social rules we normally automatically pick-up or learn, but that aren't learned in those with Asperger's.

What's the basis for these problems?

In lecture we'll discuss what's called *Theory of Mind*, or the understanding we have that others have thoughts, perspectives, and feelings distinct from our own. In terms of Asperger's syndrome, it appears to be associated with deficiencies in "normal" Theory of Mind.

In lecture we'll also learn about another socially-related clinical condition--*Williams syndrome.* In this condition, people are highly sociable or gregarious, but are seriously impaired in most cognitive processes. As with Asperger's, Williams also has a strong genetic component, but whereas people with Asperger's often have high general intelligence, people with Williams universally have low general intelligence.

Collectively what these two syndromes illustrate is how we have socially-specific cognitive processes that are dissociable from those cognitive processes linked to traditional aspects of intelligence.

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nytimes.com

April 29, 2004

FINDING OUT: Adults and Autism; An Answer, but Not a Cure, for a Social Disorder

By AMY HARMON

Last July, Steven Miller, a university librarian, came across an article about a set of neurological conditions he had never heard of called autistic spectrum disorders. By the time he finished reading, his face was wet with tears.

''This is me,'' Mr. Miller remembers thinking in the minutes and months of eager research that followed. ''To read about it and feel that I'm not the only one, that maybe it's O.K., maybe it's just a human difference, was extremely emotional. In a way it has changed everything, even though nothing has changed.''

Mr. Miller, 49, who excels at his job but finds the art of small talk impossible to master, has since been given a diagnosis of Asperger's syndrome, an autistic disorder notable for the often vast discrepancy between the intellectual and social abilities of those who have it.

Because Asperger's was not widely identified until recently, thousands of adults like Mr. Miller -- people who have never fit in socially -- are only now stumbling across a neurological explanation for their lifelong struggles with ordinary human contact.

As Mr. Miller learned from the article, autism is now believed to encompass a wide spectrum of impairment and intelligence, from the classically unreachable child to people with Asperger's and a similar condition called high-functioning autism, who have normal intelligence and often superior skills in a given area. But they all share a defining trait: They are what autism researchers call ''mind blind.'' Lacking the ability to read cues like body language to intuit what other people are thinking, they have profound difficulty navigating basic social interactions. The diagnosis is reordering their lives. Some have become newly determined to learn how to compensate.

They are filling up scarce classes that teach skills like how close to stand next to someone at a party, or how to tell when people are angry even when they are smiling. Others, like Mr. Miller, have decided to disclose their diagnosis, hoping to deflect the often-hostile responses their odd manners and miscues provoke. In some cases, it has helped. In others, it seemed only to elicit one more rejection.

This new wave of discovery among Aspies, as many call themselves, is also sending ripples through the lives of their families, soothing tension among some married couples, prompting others to call it quits. Parents who saw their adult children as lost causes or black sheep are fumbling for ways to help them, suddenly realizing that they are disabled, not stubborn or lazy.

For both Aspies and their families, relief that their difficulties are not a result of bad parenting or a fundamental character flaw is often coupled with acute disappointment at the news that there is no cure for the disorder and no drug to treat it.

''We are with Asperger's where we were 20 years ago with mental illness,'' said Lynda Geller, director of community services at the Cody Center for Autism in Stony Brook, N.Y. ''It is thought to be your fault, you should just shape up, work harder, be nicer. The fact that your brain actually works differently so you can't is not universally appreciated.''

Some Aspies interviewed asked to remain anonymous for fear of being stigmatized. But with the knowledge that their dysfunction is rooted in biology, many say remaining silent to pass as normal has become an even greater strain.

''I would like nothing better than to shout it out to everyone,'' a pastor in California whose Asperger's was just diagnosed wrote in an e-mail message. ''But there is so much explanation and education that needs to happen that I risk being judged incompetent.''

Some are finding solace in support groups where they are meeting others like themselves for the first time. And a growing number are beginning to celebrate their own unique way of seeing the world. They question the superiority of people they call ''neurotypicals'' or ''N.T.'s''and challenge them to adopt a more enlightened, gentle outlook toward social eccentricities.

Asks the tag line of one online Asperger support group: ''Is ANYONE really 'normal?' ''

Discovery
Finding Reason For Social Gaffes

In recent years, a growing awareness about autism has led to a sharp increase in children receiving special services for their autism disorders. But for many adults who came before them, the process of discovering the condition has been haphazard.

Mr. Miller, a senior academic librarian at the University of Wisconsin, Milwaukee, had searched for years for an explanation for what he saw as a personal failing, at one point buying stacks of self-help books. Many others sink into depression, their conditions misdiagnosed, or struggle without any help.

Now, autism centers intended for children are being flooded with adults who suspect they have Asperger's. Since the condition runs in families, psychologists treating autistic children are often the ones diagnosing it in parents or relatives.

Often the new diagnoses involve people who for years have been deemed rude, clueless or just plain weird because of their blunt comments or all-too-personal disclosures. They typically have a penchant for accuracy and a hard-wired dislike for the disruption of routine.

Unusually sensitive to light, touch and noise, some shrink from handshakes and hugs. Humor, which so often depends on tone of voice and familiarity with social customs, can be hard for them to comprehend. Although many have talents like memory for detail and an ability to focus intently for long periods, Aspies often end up underemployed and lonely. Unlike more severely impaired autistics, they often crave social intimacy, and they are acutely aware of their inability to get it.

Those with the condition often develop a passion for a narrow field that drives them to excel in it, but fail to realize when they are driving others crazy by talking about it. And they are reflexively honest, a trait that can be refreshing -- or not.

On a recent afternoon at the Center for Brain Health at New York University, Louise Kavaldo, 57, who received a diagnosis of Asperger's last month, prepared to take some cognitive tests.

''Do you think my shirt is too tight?'' she asked Isabel Dziobek, the researcher.

''No,'' Ms. Dziobek replied. ''I like the way the green goes with your hat.''

''Well I think your shirt is too tight,'' replied Ms. Kavaldo, who has a B.A. in sociology and works in early childhood education. ''I think it's unprofessional.''

Researchers say autism spectrum disorders are a result of a combination of perhaps 10 to 20 genes, plus environmental factors, that seem to cause the brain to exhibit less activity in its social and emotional centers. Unlike people with classic autism, which is often accompanied by mental

retardation, those with Asperger's have normal language development and intelligence. First identified in 1946 by the Viennese physician Hans Asperger, the condition was little-known until it was added to the American psychiatric diagnostic manual in 1994. Only in the last few years have mental health professionals become widely aware of it.

The degree to which someone is affected may correlate with how many of the autism genes he or she has, some researchers say. About one in 165 people are thought to be on the autistic spectrum, although estimates vary.

The recent spike in diagnoses of autism in people who are generally able to function in society has prompted some to suggest that it is an excuse for bad behavior or the latest clinical fad. But psychologists and researchers say they are simply better able to recognize the condition now. While many people may have a few of the traits and just one or two of the genes, to qualify for an Asperger's diagnosis they typically must have developed obsessive interests and social difficulties at an early age that now significantly impair their ability to function.

Carl Pietruszka, 52, said that being found to have Asperger's had been a blow to a long-held fantasy. ''It's been my hope for years and years that if I keep working at it, I'll find a strategy that will fix things, that if I practice enough, it'll be O.K.,'' Mr. Pietruszka said. ''Now I know I'm working with Asperger's, which is going to be an ongoing thing. It'll get better, but it's not going to be O.K. That has me seriously bummed out.''

Mr. Pietruszka, who was laid off from four engineering jobs over a decade, said colleagues had often ribbed him for being too serious and ''not getting it.''

''It doesn't make you feel good,'' he said. ''It festers.''

Instead of looking for work with a company where he would have to navigate office politics again, he has set up his own business as a home inspector in Harleysville, Pa., where clients have complimented his thoroughness.

Inspiration
Trying to Learn Hidden Curriculum

Pretending to be normal, even for a few hours, is mentally exhausting, many Aspies say. But for some, the diagnosis is an inspiration to master what autism experts call the hidden curriculum: social rules everyone knows but could never say how they learned.

A class taught by Mary Cohen, a psychologist at the University of Pennsylvania's new clinic for adult social learning disorders, is crowded with people whose conditions are newly diagnosed. The subject at a recent session was basic conversation. As the class watched from behind a two-way mirror, pairs of students tried talking to each other without lapsing into silence.

Then came the review: had it been a dialogue, or had someone gone on too long about the early history of Russia? Did they lean in? Eye contact, Dr. Cohen cautioned, should be regular but not ''like you're boring a hole through them.'' Moving the eyebrows can help.

Gresham O'Malley, 33, a computer support technician, said he hoped the class might make it easier for him to find a girlfriend.

But classes like Dr. Cohen's are few and far between. Mostly, parents, siblings and spouses are left to explain such everyday social rules as which urinal to select (preferably not the one next to another that is occupied) and why a prospective employer does not have to be told about a punctuality problem.

At a support group for parents in Dix Hills, N.Y., the two-hour meeting runs late as more than two dozen participants trade notes about adult children who always had trouble making friends but now

face more serious problems. After flubbing dozens of job interviews, many spend their days playing video games.

''Don't you get the advice, 'Give him a kick in the pants?' '' one father asks.

''Exactly,'' answers a mother. '' 'You're spoiling him.' ''

''Our relatives will say, 'He looks fine to me,' '' adds another parent. ''And he does look fine. That's not the point.''

Some of the anger is directed at mental health professionals who as recently as two years ago failed to identify Asperger's when they saw it. But some parents also complain about the lack of tolerance for ''weird'' kids, and the weird adults they grow up to be.

''If my daughter was in a wheelchair, people would be opening doors for her,'' said Larry Berman, a salesman who attends a similar group in Philadelphia. ''Wouldn't it make a quantum difference if instead of it all being on our kids to flex to meet the rest of the world, the rest of the world would meet them halfway?''

Aware that their missteps seem all the more shocking because they show no visible signs of disability, some are choosing to disclose their Asperger diagnosis in hopes of heading off social mishaps -- or because they are in the middle of one.

When Eric Jorgensen, a programmer at Microsoft, confronted his boss's boss in a group meeting, his colleagues told him later that they were cringing, and he received a reprimand from his supervisor.

''I talked to my boss and said, 'This is an example where I need help,' '' said Mr. Jorgensen, who realized that he had Asperger's after his son's diagnosis of autism. Mr. Jorgensen's boss at the time, Ed Keith, had never heard of Asperger's. But he assigned a team member to form strategies with Mr. Jorgensen. In public meetings, they agreed, someone would throw a pen at him when he was going too far. Privately, they would tell him directly, rather than hint at it in ways he might not understand.

''They cared about me and I sensed that,'' Mr. Jorgensen said. It may have helped, too, that he is what Mr. Keith describes as ''one of the best guys that I've ever worked with'' at finding defects in the design of software. In the argument with their boss, Mr. Keith said, Mr. Jorgensen was clearly undiplomatic. ''But he was right.''

Not everyone is finding such enlightened responses.

When John Hatton, 40, of Boston, began to tell friends about his Asperger's diagnosis, they were skeptical.

''Almost everyone I contacted about this were either sort of perplexed or -- I don't want to say hostile,'' said Mr. Hatton, who said he had been fired from more than 26 jobs over the last two decades and now received federal disability assistance. ''They thought I had found an excuse or something.''

Results
Saving Marriages, Ending Others

For troubled marriages, the diagnosis can be pivotal.

One Los Angeles woman remembers the precise angle of the sun coming through the library window when she first read about Asperger's. She had wanted to leave her marriage for years but blamed herself for failing to make it work. When her husband refused to discuss whether his condition contributed to their problems, she said, she was able to leave without guilt.

But for Janet and Eric Jorgensen, the diagnosis helped smooth out the rough edges. Ms. Jorgensen, attending a conference to learn more about her autistic son, said it was like ''a light coming on'' when she heard that adult family members were often given diagnoses only after a child had been identified as being on the autism spectrum.

''It just sort of hit me, 'That explains Eric,' '' she said.

He still says things that are callous, at least on the surface.

''She'll say something about how terrible her clothes look,'' Mr. Jorgensen explains. ''I'll say, 'Yes, honey, those are terrible-looking clothes,' when really she's wanting some affirmation that her clothes don't look terrible.''

At those moments, Ms. Jorgensen now tells her husband that he is acting like an ''ass burger,'' a running joke that defuses anger on both sides. But such exchanges have mostly disappeared because Ms. Jorgensen knows that she is unlikely to get what she wants that way.

Learning to be more direct herself was not so horrible.

''I would just go change the clothes,'' she said. ''If I want affirmation I need to say, 'I'm feeling a little insecure, can you give me reassurance?' ''

United by their newfound identity, Asperger adults, so used to being outcasts, are finding themselves part of an unlikely community. Through online and in-person support groups, many are for the first time sharing the pains and occasional pleasures of feeling, as one puts it, ''like extraterrestrials stranded on earth.''

Emboldened by the strength of their numbers, they are also increasingly defying, or at least exploring, how to bend the social rules to which they have tried so hard to adapt.

Some brag about their high scores on the ''autism quotient'' test, developed by Cambridge University as a measure of autism in adults. ''What's your 'Rain Man' talent?'' asked a recent subject line on an Aspie e-mail discussion list, referring to the movie starring Dustin Hoffman as an autistic savant. Answers included perfect memory for phone numbers and ''annoying people by asking awkward questions.''

At a recent meeting of the Manhattan adult support group, a woman explained that she ''just wanted to see if I fit in the group.''

A longtime member replied, ''None of us fit in with the group.''

Neurotypical friends had been invited to serve as ''expert'' panelists to field questions on the evening's topic: flirting. But the best advice came from the Aspies.

''I find that sometimes shutting up and just not talking often makes them think you're a good listener when in fact you're just not talking,'' said one participant.

Michael J. Carly, the group's leader, suggested: ''How about, 'Hi, I'm Michael. I really stink at flirting but would you like to go for a walk to the library or something?' ''

The next generation of Asperger's adults may already be benefiting from an earlier diagnosis. After the condition was diagnosed in her son Jared at age 12, Nancy Johnson of Edmonds, Wash., was able to persuade his public school to provide a full-time aide who coached him on social skills for the next four years. Ms. Johnson learned how to rid Jared of some of his behavioral quirks, like his tendency to walk over to other tables in restaurants to get a better look at the food.

Ignoring his mother's concerns about his special interest (''I wouldn't have picked lizards,'' she

says), Jared, now 19, has his path to becoming a renowned herpetologist all mapped out. After a rough time in middle school, where he says he finally learned the social consequences of picking his nose in public, he describes himself as ''practically popular.''

''It does seem like people with Asperger's, once they click, have a lot of advantages in life,'' Jared said. ''It's like we stay tadpoles for longer, but once we're ready, we're no less of a frog.''

Lecture 22
The Mirror System

In the last two lectures we have been considering the idea that a core aspect of social cognition is our ability to "read" the minds of others (Lecture 20), and that people can have specific impairments in these abilities that are distinct from general intelligence (Lecture 21). We now turn to examining the neurobiological basis for these abilites.

The basic idea is that the systems we have that support our own actions and emotions also respond to––or "mirror"––the actions and emotions of others. In this manner, we understand what others are thinking and intending by (1) reading their actions and emotions and then (2) decoding them based on what *we* think and intend when we display those emotions and make those actions.

The first article for today, *Cells That Read Minds*, makes these exact points.

What's particularly compelling about the idea of a mirror system in the brain is that it has the potential to explain a wide variety of human phenomena, such as empathy, language and learning in newborns and infants.

In the second article for today, *You Remind Me of Me*, we turn to another consequence of the mirror system--the propensity we have to automatically mimic the actions and postures of people we're talking to, and how such mimicry can impact how we feel about those we're conversing with.

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Cells That Read Minds

By SANDRA BLAKESLEE

On a hot summer day 15 years ago in Parma, Italy, a monkey sat in a special laboratory chair waiting for researchers to return from lunch. Thin wires had been implanted in the region of its brain involved in planning and carrying out movements.

Every time the monkey grasped and moved an object, some cells in that brain region would fire, and a monitor would register a sound: brrrrrip, brrrrrip, brrrrrip.

A graduate student entered the lab with an ice cream cone in his hand. The monkey stared at him. Then, something amazing happened: when the student raised the cone to his lips, the monitor sounded - brrrrrip, brrrrrip, brrrrrip - even though the monkey had not moved but had simply observed the student grasping the cone and moving it to his mouth.

The researchers, led by Giacomo Rizzolatti, a neuroscientist at the University of Parma, had earlier noticed the same strange phenomenon with peanuts. The same brain cells fired when the monkey watched humans or other monkeys bring peanuts to their mouths as when the monkey itself brought a peanut to its mouth.

Later, the scientists found cells that fired when the monkey broke open a peanut or heard someone break a peanut. The same thing happened with bananas, raisins and all kinds of other objects.

"It took us several years to believe what we were seeing," Dr. Rizzolatti said in a recent interview. The monkey brain contains a special class of cells, called mirror neurons, that fire when the animal sees or hears an action and when the animal carries out the same action on its own.

But if the findings, published in 1996, surprised most scientists, recent research has left them flabbergasted. Humans, it turns out, have mirror neurons that are far smarter, more flexible and more highly evolved than any of those found in monkeys, a fact that scientists say reflects the evolution of humans' sophisticated social abilities.

The human brain has multiple mirror neuron systems that specialize in carrying out and understanding not just the actions of others but their intentions, the social meaning of their behavior and their emotions.

"We are exquisitely social creatures," Dr. Rizzolatti said. "Our survival depends on understanding the actions, intentions and emotions of others."

He continued, "Mirror neurons allow us to grasp the minds of others not through conceptual reasoning but through direct simulation. By feeling, not by thinking."

The discovery is shaking up numerous scientific disciplines, shifting the understanding of culture, empathy, philosophy, language, imitation, autism and psychotherapy.

Everyday experiences are also being viewed in a new light. Mirror neurons reveal how children learn, why people respond

to certain types of sports, dance, music and art, why watching media violence may be harmful and why many men like pornography.

How can a single mirror neuron or system of mirror neurons be so incredibly smart?

Most nerve cells in the brain are comparatively pedestrian. Many specialize in detecting ordinary features of the outside world. Some fire when they encounter a horizontal line while others are dedicated to vertical lines. Others detect a single frequency of sound or a direction of movement.

Moving to higher levels of the brain, scientists find groups of neurons that detect far more complex features like faces, hands or expressive body language. Still other neurons help the body plan movements and assume complex postures.

Mirror neurons make these complex cells look like numbskulls. Found in several areas of the brain - including the premotor cortex, the posterior parietal lobe, the superior temporal sulcus and the insula - they fire in response to chains of actions linked to intentions.

Studies show that some mirror neurons fire when a person reaches for a glass or watches someone else reach for a glass; others fire when the person puts the glass down and still others fire when the person reaches for a toothbrush and so on. They respond when someone kicks a ball, sees a ball being kicked, hears a ball being kicked and says or hears the word "kick."

"When you see me perform an action - such as picking up a baseball - you automatically simulate the action in your own brain," said Dr. Marco Iacoboni, a neuroscientist at the University of California, Los Angeles, who studies mirror neurons. "Circuits in your brain, which we do not yet entirely understand, inhibit you from moving while you simulate," he said. "But you understand my action because you have in your brain a template for that action based on your own movements.

"When you see me pull my arm back, as if to throw the ball, you also have in your brain a copy of what I am doing and it helps you understand my goal. Because of mirror neurons, you can read my intentions. You know what I am going to do next."

He continued: "And if you see me choke up, in emotional distress from striking out at home plate, mirror neurons in your brain simulate my distress. You automatically have empathy for me. You know how I feel because you literally feel what I am feeling."

Mirror neurons seem to analyzed scenes and to read minds. If you see someone reach toward a bookshelf and his hand is out of sight, you have little doubt that he is going to pick up a book because your mirror neurons tell you so.

In a study published in March 2005 in Public Library of Science, Dr. Iacoboni and his colleagues reported that mirror neurons could discern if another person who was picking up a cup of tea planned to drink from it or clear it from the table. "Mirror neurons provide a powerful biological foundation for the evolution of culture," said Patricia Greenfield, a psychologist at the U.C.L.A. who studies human development.

Until now, scholars have treated culture as fundamentally separate from biology, she said. "But now we see that mirror neurons absorb culture directly, with each generation teaching the next by social sharing, imitation and observation."

Other animals - monkeys, probably apes and possibly elephants, dolphins and dogs - have rudimentary mirror neurons, several mirror neuron experts said. But humans, with their huge working memory, carry out far more sophisticated imitations.

Language is based on mirror neurons, according to Michael Arbib, a neuroscientist at the University of Southern California. One such system, found in the front of the brain, contains overlapping circuitry for spoken language and sign language.

In an article published in Trends in Neuroscience in March 1998, Dr. Arbib described how complex hand gestures and the complex tongue and lip movements used in making sentences use the same machinery. Autism, some researchers believe, may involve broken mirror neurons. A study published in the Jan. 6 issue of Nature Neuroscience by Mirella Dapretto, a neuroscientist at U.C.L.A., found that while many people with autism can identify an emotional expression, like sadness, on another person's face, or imitate sad looks with their own faces, they do not feel the emotional significance of the imitated emotion. From observing other people, they do not know what it feels like to be sad, angry, disgusted or surprised.

Mirror neurons provide clues to how children learn: they kick in at birth. Dr. Andrew Meltzoff at the University of Washington has published studies showing that infants a few minutes old will stick out their tongues at adults doing the same thing. More than other primates, human children are hard-wired for imitation, he said, their mirror neurons involved in observing what others do and practicing doing the same things.

Still, there is one caveat, Dr. Iacoboni said. Mirror neurons work best in real life, when people are face to face. Virtual reality and videos are shadowy substitutes.

Nevertheless, a study in the January 2006 issue of Media Psychology found that when children watched violent television programs, mirror neurons, as well as several brain regions involved in aggression were activated, increasing the probability that the children would behave violently.

The ability to share the emotions of others appears to be intimately linked to the functioning of mirror neurons, said Dr. Christian Keysers, who studies the neural basis of empathy at the University of Groningen in the Netherlands and who has published several recent articles on the topic in Neuron.

When you see someone touched in a painful way, your own pain areas are activated, he said. When you see a spider crawl up someone's leg, you feel a creepy sensation because your mirror neurons are firing.

People who rank high on a scale measuring empathy have particularly active mirror neurons systems, Dr. Keysers said.

Social emotions like guilt, shame, pride, embarrassment, disgust and lust are based on a uniquely human mirror neuron system found in a part of the brain called the insula, Dr. Keysers said. In a study not yet published, he found that when people watched a hand go forward to caress someone and then saw another hand push it away rudely, the insula registered the social pain of rejection. Humiliation appears to be mapped in the brain by the same mechanisms that encode real physical pain, he said.

Psychotherapists are understandably enthralled by the discovery of mirror neurons, said Dr. Daniel Siegel, the director of the Center for Human Development in Los Angeles and the

author of "Parenting From the Inside Out," because they provide a possible neurobiological basis for the psychological mechanisms known as transference and countertransference.

In transference, clients "transfer" feelings about important figures in their lives onto a therapist. Similarly, in countertransference, a therapist's reactions to a client are shaped by the therapist's own earlier relationships.

Therapists can use their own mirror system to understand a client's problems and to generate empathy, he said. And they can help clients understand that many of their experiences stem from what other people have said or done to them in the past.

Art exploits mirror neurons, said Dr. Vittorio Gallese, a neuroscientist at Parma University. When you see the Baroque sculptor Gian Lorenzo Bernini's hand of divinity grasping marble, you see the hand as if it were grasping flesh, he said. Experiments show that when you read a novel, you memorize positions of objects from the narrator's point of view.

Professional athletes and coaches, who often use mental practice and imagery, have long exploited the brain's mirror properties perhaps without knowing their biological basis, Dr. Iacoboni said. Observation directly improves muscle performance via mirror neurons.

Similarly, millions of fans who watch their favorite sports on television are hooked by mirror neuron activation. In someone who has never played a sport - say tennis - the mirror neurons involved in running, swaying and swinging the arms will be activated, Dr. Iacoboni said.

But in someone who plays tennis, the mirror systems will be highly activated when an overhead smash is observed. Watching a game, that person will be better able to predict what will happen next, he said.

In yet another realm, mirror neurons are powerfully activated by pornography, several scientists said. For example, when a man watches another man have sexual intercourse with a woman, the observer's mirror neurons spring into action. The vicarious thrill of watching sex, it turns out, is not so vicarious after all.

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MIND

You Remind Me of Me

By BENEDICT CAREY

Artful persuasion depends on eye contact, but not just any kind. If one person prefers brief glances and the other is busy staring deeply, then it may not matter how good the jokes are or how much they both loved "Juno." Rhythm counts.

Voice cadence does, too. People who speak in loud, animated bursts tend to feed off others who do the same, just as those who are lower key tend to relax in a cool stream of measured tones.

"Myself, I'm very conscious of people's body position," said Ray Allieri of Wellesley, Mass., a former telecommunications executive with 20 years in marketing and sales. "If they're leaning back in their chair, I do that, and if they're forward on their elbows, I tend to move forward,"

Psychologists have been studying the art of persuasion for nearly a century, analyzing activities like political propaganda, television campaigns and door-to-door sales. Many factors influence people's susceptibility to an appeal, studies suggest, including their perception of how exclusive an opportunity is and whether their neighbors are buying it.

Most people are also strongly sensitive to rapport, to charm, to the social music in the person making the pitch. In recent years, researchers have begun to decode the unspoken, subtle elements that come into play when people click.

They have found that immediate social bonding between strangers is highly dependent on mimicry, a synchronized and usually unconscious give and take of words and gestures that creates a current of good will between two people.

By understanding exactly how this process works, researchers say, people can better catch themselves when falling for an artful pitch, and even sharpen their own social skills in ways they may not have tried before.

"Really good salespeople, and for that matter good con artists, have known about these skills and used them forever," Jeremy Bailenson, a psychologist at Stanford, said. "All we're doing now is measuring and describing more precisely what it is they're doing, whether consciously or not."

Imitation is one of the most common and recognizable behaviors in the animal kingdom. Just as baby chimps learn to climb by aping their elders, so infants pick up words and gestures by copying parents. They sense and mimic peers' behavior from early on, too, looking up at the ceiling if others around them do so or mirroring others' cringes of fear and anxiety.

Such behavioral contagion probably evolved early for survival, some scientists argue. It is what scatters a flock well before most members see a lunging predator.

Yet by drawing on apparently similar skills, even in seemingly trivial ways, people can prompt almost instantaneous cooperation from complete strangers.

In a recent experiment, Rick van Baaren, a psychologist at Nijmegen University in the Netherlands, had student participants go to a lab and give their opinions about a series of advertisements. A member of his research team mimicked half the participants while they spoke, roughly mirroring the posture and the position of their arms and legs, taking care not to be too obvious.

Minutes later, the experimenter dropped six pens on the floor, making it look like an accident.

In several versions of this simple sequence, participants who had been mimicked were two to three times as likely to pick up the pens as those who had not.

The mimicry had not only increased good will toward the researcher within minutes, the study concluded, but it also prompted "an increased pro-social orientation in general."

That orientation applies to far more than dropped pens. In a study due out in the spring, Robin Tanner and Tanya Chartrand, psychologists

at Duke, led a research team that tested how being mimicked might affect the behavior of a potential client or investor.

The team had 37 Duke students try out what was described as a new sports drink, Vigor, and answer a few questions about it. The interviewer mimicked about half the participants using a technique Dr. Chartrand had developed in earlier studies.

The technique involved mirroring a person's posture and movements, with a one- to two-second delay. If he crosses his legs, then wait two seconds and do the same, with opposite legs. If she touches her face, wait a beat or two and do that. If he drums his fingers or taps a toe, wait again and do something similar.

The idea is to be a mirror but a slow, imperfect one. Follow too closely, and most people catch it — and the game is over.

In the study, the researchers set up the interviews so each student's experience was virtually identical, except for the mimicking.

None of the copied participants picked up on the mimicry. But by the end of the short interview, they were significantly more likely than the others to consume the new drink, to say they would buy it and to predict its success in the market.

In a similar experiment, the psychologists found that this was especially true if the participants knew that the interviewer, the mimic, had a stake in the product's success.

"This is somewhat counterintuitive," Dr. Chartrand said in an interview. "Normally, you'd expect when people realize that someone was invested in a product and trying to sell it to them, their reaction would be attenuated. They'd be less enthusiastic.

"But we found that people who were mimicked actually felt more strongly about the product when they knew the other person was invested in it."

Any amiable conversation provides ample evidence of this subconscious social waltz. Smiles are contagious. So is nodding, in an amiable conversation.

Accents converge quickly and automatically. A country chime or an Irish whistle can seemingly infect the voice of a New Yorker in a 10-minute phone call.

"I especially find myself falling into a Southern accent, which is crazy," Mr. Allieri, the telecom executive, said. "I'm from Boston.

"But I think what good salespeople really do is pick up on physical cues and respond to them without thinking much about it."

It is one thing to move like a naturally synchronized swimmer through the pools of everyday conversation without thinking, however. It is another to deliberately employ mimicry to persuade or seduce.

Dr. Bailenson, the Stanford psychologist, has been testing the effects of different forms of mimicry by programming a computer-generated figure, an avatar, to mirror the movements and gestures of people in a study.

He has found that his subjects pick up the mimicry when it is immediate and precise. If the avatar is slightly out of sync, however — waits four seconds, for instance — then the mimicking goes unnoticed, and the usual rules apply. The virtual creating comes across as warm and convincing, as if controlled by another human.

"The point is it's a delicate balance to get it right, and I suspect that people who are good at this know how to do it intuitively," Dr. Bailenson said.

Or they have developed ways to engage their skills indirectly.

Veldon Smith, a musician and legendary salesman living in Centennial, Colo., who spent 30 years in the automobile parts business before retiring a few years ago, said:

"One thing I always did, I learned as much as possible about a client before I visited, what their problem was, what they were worried about. Then I would go in with a story about myself being in the same predicament.

"So when I walked in, I was in exactly the same frame of mind as the customer. I was immediately on the same wavelength. Everything else kind of flowed out of that."

One reason subtle mimicry is so instantly beguiling may be that it draws on and, perhaps, activates brain circuits involved in feelings of empathy.

In several studies, Jean Decety, a neuroscientist at the University of Chicago, has shown that some of the same brain regions that are active when a person feels pain also flare up when that person imagines someone else like a loved one feeling the same sting or ache.

A similar process almost certainly occurs when a person takes pleasure in the good fortune of a friend or the apparent enjoyment of a conversation partner, Dr. Decety said.

“When you’re being mimicked in a good way, it communicates a kind of pleasure, a social high you’re getting from the other person, and I suspect it activates the areas of the brain involved in sensing reward,” he said.

Social mimicry can and does go wrong. At its malicious extreme, it curdles into mockery, which is why people often recoil when they catch of whiff of mimicry, ending any chance of a social bond. Preliminary studies suggest that the rules change if there is a wide cultural gap between two people. For almost everyone else, however, subtle mimicry comes across as a form of flattery, the physical dance of charm itself. And if that kind of flattery doesn’t close a deal, it may just be that the customer isn’t buying.

Everyone has the right to be charmed but not seduced.

Lecture 23
Social Communication

In Part 3 of the course we have converged on the idea that we have highly-evolved cognitive systems designed to facilitate social interactions. In Lecture 23, we look at the problems for social interactions that have arisen due to the unnatural communication environments provided by modern communication technologies.

The first article, *Flame First, Think Later: New Clues to E-Mail Misbehavior* centers on the phenomenon of what is called the "on-line disinhibition effect", where we're much more likely to say things in electronic communications than what we would actually say in person. As we learn, a large part of the problem is that without normal visual channels to read someone's emotional state when we're talking with them (as discussed in Lecture 20), we can easily misread the intentions in someone's emails and the like.

In the second article, *As the Grapevine Withers, Spam Filters Take Root*, we take up the idea of "notification norms", or the things we signal to other people depending on how we communicate with them electronically. The idea here is that we can be sensitive to things like whether someone sends us a personal email vs. sending it to us as a part of a mass emailing. In this sense, we are now developing a whole new set of do's and don'ts for social communication, all based on our on-line interactions.

In the final article for the lecture, *Friends, Until I Delete You,* we turn to how social networking media have forced a new set of social communication demands on us. In the article, the issue stems from Facebook and the agony we go through in deciding whether or not to keep someone as a friend. While the idea of ending a friendship is by no means new, as it turns out, when you can do it by simply pressing a button on a web page, it changes the nature of how we think about the idea of "unfriending."

February 20, 2007

ESSAY

Flame First, Think Later: New Clues to E-Mail Misbehavior

By DANIEL GOLEMAN

Jett Lucas, a 14-year-old friend, tells me the kids in his middle school send one other a steady stream of instant messages through the day. But there's a problem.

"Kids will say things to each other in their messages that are too embarrassing to say in person," Jett tells me. "Then when they actually meet up, they are too shy to bring up what they said in the message. It makes things tense."

Jett's complaint seems to be part of a larger pattern plaguing the world of virtual communications, a problem recognized since the earliest days of the Internet: flaming, or sending a message that is taken as offensive, embarrassing or downright rude.

The hallmark of the flame is precisely what Jett lamented: thoughts expressed while sitting alone at the keyboard would be put more diplomatically — or go unmentioned — face to face.

Flaming has a technical name, the "online disinhibition effect," which psychologists apply to the many ways people behave with less restraint in cyberspace.

In a 2004 article in the journal CyberPsychology & Behavior, John Suler, a psychologist at Rider University in Lawrenceville, N.J., suggested that several psychological factors lead to online disinhibition: the anonymity of a Web pseudonym; invisibility to others; the time lag between sending an e-mail message and getting feedback; the exaggerated sense of self from being alone; and the lack of any online authority figure. Dr. Suler notes that disinhibition can be either benign — when a shy person feels free to open up online — or toxic, as in flaming.

The emerging field of social neuroscience, the study of what goes on in the brains and bodies of two interacting people, offers clues into the neural mechanics behind flaming.

This work points to a design flaw inherent in the interface between the brain's social circuitry and the online world. In face-to-face interaction, the brain reads a continual cascade of emotional signs and social cues, instantaneously using them to guide our next move so that the encounter goes well. Much of this social guidance occurs in circuitry centered on the orbitofrontal cortex, a center for empathy. This cortex uses that social scan to help make sure that what we do next will keep the interaction on track.

Research by Jennifer Beer, a psychologist at the University of California, Davis, finds that this face-to-face guidance system inhibits impulses for actions that would upset the other person or otherwise throw the interaction off. Neurological patients with a damaged orbitofrontal cortex lose the ability to modulate the amygdala, a source of unruly impulses; like small children, they commit mortifying social gaffes like kissing a complete stranger, blithely unaware that they are doing anything untoward.

Socially artful responses emerge largely in the neural chatter between the orbitofrontal cortex and emotional centers like the amygdala that generate impulsivity. But the cortex needs social information — a change in tone of voice, say — to know how to select and channel our impulses. And in e-mail there are no channels for voice, facial expression or other cues from the person who will receive what we say.

True, there are those cute, if somewhat lame, emoticons that cleverly arrange punctuation marks to signify an emotion. The e-mail equivalent of a mood ring, they surely lack the neural impact of an actual smile or frown. Without the raised eyebrow that signals irony, say, or the tone of voice

that signals delight, the orbitofrontal cortex has little to go on. Lacking real-time cues, we can easily misread the printed words in an e-mail message, taking them the wrong way.

And if we are typing while agitated, the absence of information on how the other person is responding makes the prefrontal circuitry for discretion more likely to fail. Our emotional impulses disinhibited, we type some infelicitous message and hit “send” before a more sober second thought leads us to hit “discard.” We flame.

Flaming can be induced in some people with alarming ease. Consider an experiment, reported in 2002 in The Journal of Language and Social Psychology, in which pairs of college students — strangers — were put in separate booths to get to know each other better by exchanging messages in a simulated online chat room.

While coming and going into the lab, the students were well behaved. But the experimenter was stunned to see the messages many of the students sent. About 20 percent of the e-mail conversations immediately became outrageously lewd or simply rude.

And now, the online equivalent of road rage has joined the list of Internet dangers. Last October, in what The Times of London described as “Britain’s first ‘Web rage’ attack,” a 47-year-old Londoner was convicted of assault on a man with whom he had traded insults in a chat room. He and a friend tracked down the man and attacked him with a pickax handle and a knife.

One proposed solution to flaming is replacing typed messages with video. The assumption is that getting a message along with its emotional nuances might help us dampen the impulse to flame.

All this reminds me of a poster on the wall of classrooms I once visited in New Haven public schools. The poster, part of a program in social development that has lowered rates of violence in schools there, shows a stoplight. It says that when students feel upset, they should remember that the red light means to stop, calm down and think before they act. The yellow light prompts them to weigh a range of responses, and their consequences. The green light urges them to try the best response.

Not a bad idea. Until the day e-mail comes in video form, I may just paste one of those stoplights next to my monitor.

Daniel Goleman is the author of “Social Intelligence: The New Science of Human Relationships.”

The New York Times
nytimes.com

May 22, 2007

FINDINGS

As the Grapevine Withers, Spam Filters Take Root

By JOHN TIERNEY

Thanks to the sociologist Dan Ryan, I'm coming to terms with my need for spam filters against my friends' e-mail.

It's not that I've lost interest in them. I still want to know how they're doing, but I can survive without their vacation itinerary or last weekend's golf scores. I'd like to keep up with their work, but I don't need all their blog posts or their deep thoughts on the Iowa caucuses.

I'm glad to see a joke or an article that they picked out for me, but not one that they blasted to everyone in their address book. Did they really imagine I wanted to drop everything this second to contemplate the future of NATO? Are they writing personal notes to their A-list friends and relegating me to the @-list? What am I, chopped Spam?

What we have here is obviously not a failure to communicate, but it's not quite the opposite either. It's not a simple case of information overload, according to a seminal article in the journal Sociological Theory by Dr. Ryan, a professor at Mills College in Oakland, Calif. He defines it — with all the flair we've come to expect from that journal — as a violation of the "notification norms" that "constrain the behavior of nodes in social networks."

Technology now lets us tell everyone everything at once, but we still value a network that existed before the Web: the grapevine. When you pass along gossip to a friend or colleague, you're doing more than just relaying news. You're defining a social circle. You're reassuring the listeners that they're in the loop — and subtly obliging them to remember that you are, too.

The golden rule of this "information order," as Dr. Ryan calls it, is to tell unto others as you would have them tell unto you. You shouldn't leave your trusted colleagues at the office in the dark about a coming shake-up, but you shouldn't be an electronic font of trivia, either. You filter the news for them and expect them to do the same for you. You tell them what they need to know in the way they expect to hear it.

"Even though we all claim to hate gossip and being in or out of the loop, there's an emotional benefit to grapevines," Dr. Ryan says. "I think of it as informational grooming, like primates picking bugs off each other. We don't want to get information all at once. Some you want to get as an insider: 'I talked to Bob yesterday and he wanted me to tell you...' Telling everyone violates our sense that we live in a rich array of social relationships."

Technology hasn't eliminated the desire for rules about who tells what, when and how. You don't want your wife or girlfriend to tell you she's pregnant by sending an e-mail message. A close friend could be miffed if he found about your hot date on Friday not from you, but from a casual acquaintance who had already seen pictures of it on your Facebook page.

A host may think it's a friendly gesture to e-mail invitations to a party with all the recipients' names in the address line, but if the names aren't in alphabetical order and yours is near the end, the message may not seem so friendly. You could have the same out-of-the-loop feeling as a manager who learns big news about his department in the same e-mail

message sent to everyone else in the company.

Every message incorporates another message in the way it is delivered, whether it's an e-mail or a ransom note pinned to an ear. Dr. Ryan calls this metanotification. The metamessage is usually less gruesome than a body part, although once a CC: list reaches critical mass it has a horror all its own. Dr. Ryan said that in barraging me with "friendly-fire spam," my correspondents were also telling me:

"I'm too busy to be bothered thinking much about whether and why you, recipient, might actually want to know this."

"At this moment I'm treating you just like everyone else in my address book."

"I have this category for you — journalist — and some really crude and naïve sense of what you must be interested in, and I think that I'm plugged into the stuff that's going on in the world a lot better than you are, so you're lucky that I'm your eyes and ears out here."

Yes, those messages came through pretty clearly, although I like to think my friends didn't mean to do all that metanotifying. They presumably figured I might be interested in what they were thinking — and often I am. Compared with all the spam I get from strangers, their stuff is riveting — even when they launch into their Middle East peace plans.

But it's still spam, and you don't expect that from friends. It's the equivalent of the holiday cards with the what-our-family-did-last-year letter. We recognize that these letters serve a purpose — they can even be entertaining, intentionally or not — and we realize that the writers don't have time to send personal letters to all their friends. But the mass-produced pseudo-intimacy still seems dorky.

That's why, as Dr. Ryan pointed out, so many of these holiday dispatches begin with an apology like, "We hate these photocopied letters, too." The writers know they must acknowledge that a notification norm has been broken. The most diligent will scribble a brief personal note on the letter to send a further message: See, you're not like all the others. We have a relationship!

That's the kind of signal I've started looking for in the e-mail messages from my friends-turned-spammers — some recognition that I'm more than just a Contact. I'm trying filters that distinguish letters with a small display of netiquette, like having my name somewhere besides the address line. I'm not looking for a long personal note. It's the metanotification that counts.

January 29, 2009

Friends, Until I Delete You

By DOUGLAS QUENQUA

A PERSON could go mad trying to pinpoint the moment he lost a friend. So seldom does that friend make his feelings clear by sending out an e-mail alert.

It's not just a fact of life, but also a policy on Facebook. While many trivial actions do prompt Facebook to post an alert to all your friends — adding a photo, changing your relationship status, using Fandango to buy tickets to "Paul Blart: Mall Cop" — striking someone off your list simply is not one of them.

It is this policy that Burger King ran afoul of this month with its "Whopper Sacrifice" campaign, which offered a free hamburger to anyone who severed the sacred bonds with 10 of the friends they had accumulated on Facebook. Facebook suspended the program because Burger King was sending notifications to the castoffs letting them know they'd been dropped for a sandwich (or, more accurately, a tenth of a sandwich).

The campaign, which boasted of ending 234,000 friendships, is history now — Burger King chose to end it rather than tweak it to fit Facebook's policy — but the same can hardly be said of the emerging anxiety it tapped. As social networking becomes ubiquitous, people with an otherwise steady grip on social etiquette find themselves flummoxed by questions about "unfriending" people: how to do it, when to do it and how to get away with it quietly.

"If someone with more than 1,000 friends unfriends me, I get offended," said Greg Atwan, an author of "The Facebook Book," a satirical guide. "But if someone only has 100 friends, you understand they're trying to limit it to their intimates."

Mr. Atwan, a recent graduate of Harvard (where Facebook got its start), recommends culling your friend list once a year to remove total strangers and other hangers-on. Keeping your numbers down gives you more leeway to be selective about whom you approve in the first place, he said.

(While some people prefer the term "defriending," a quick survey of user-created groups on Facebook shows "unfriending" to be the more popular choice. A Facebook spokeswoman, Brandee Barker, said there was no officially preferred term.)

Of course, not all unfriendings are equal. There seem to be several varieties, ranging from the completely impersonal to the utterly vindictive. First is the simple thinning of the herd, removing that grad student you met at a party two years ago and haven't spoken to since or that kid from middle school you barely remember.

These were the people whom Steven Schiff, a news assistant at Vault.com, a career services Web site, sacrificed to get his Whopper.

"I found there were quite a few people on my list that I'd never even spoken to, much less been close friends with," he said by

telephone.

Mr. Schiff, 25, said he experienced only the slightest guilt at eliminating those people. While he didn't feel the need to write to them individually to explain things, he did use his personal blog to address them en masse.

"Let's be honest here, questionable Facebook friend," he wrote. "We've been keeping you around all this time because we'd just feel bad if you ever found out that you got the ax. It's just, well, up until now nobody offered us a Whopper in exchange for your feelings."

This was just the sort of sentiment that Burger King and its advertising agency, Crispin Porter & Bogusky, were aiming to evoke when they set up the campaign. Burger King decided that it would do the talking for this article rather than its agency and delegated the task to Brian Gies, a vice president of marketing who said he was not a member of Facebook and therefore had not participated in the "Whopper Sacrifice."

Mr. Gies explained the marketing team's thinking about Facebook. "It seemed to us that it quickly evolved from quality of friends to quantity," he said, "which was interesting to us because it felt like the virtual definition of a friend became something different than the friends that you'd want to hang out with."

From there, Mr. Gies said, the team started wondering: "Do you really want to have all these people knowing what you're up to and what you're interested in? We wanted to be part of that conversation and part of that solution, and 'Whopper Sacrifice' was born."

Facebook, which now has more than 150 million members, has clearly been built on the back of the culture of oversharing. Many members broadcast the mundane details of their lives through a "status update" feature, which lets people — nay, encourages them — to describe the contents of their lunch or the virulence of their bronchitis.

Even in this environment, however, deleting friends does not generate a notification of any sort, leaving members to discover they've been unfriended only when they find they no longer have access to someone's profile. It can be a jarring experience, especially considering that the person who dumped you at some point either requested you as a friend or accepted your request (on Facebook, that is how friends are made). But members understand that such selective discretion is critical to the social-networking ecosystem.

"We believe that relationships change, and users should be able to have the friend list respect those changes without the pressure of a public notification," Ms. Barker said.

Nor does Facebook care to be a party to what might be called punitive unfriending, banishing someone from your network for violating one or more of your personal rules of conduct. Perhaps someone annoys you by posting an obsessive number of status updates, or expresses himself in a way that you consider obnoxious?

Those were the excuses that Ehren S., a former co-worker of mine who apparently unfriended me sometime this past spring, offered up recently for giving me the digital heave-ho.

"I believe it was based on a passive-aggressive update of yours to which I sighed, kinda shook my head and pressed 'delete from friends,' " she confessed by e-mail. "I find negativity a bit tiresome and don't have the patience for it."

Fine. Though forgive me for pointing out that Ehren, who asked that I not use her full name, initially tried to fib her way out of the awkwardness by saying she did it for a Whopper.

Last week the question of friendship decorum grew so vexing for Henry Blodget, the former securities analyst whose loud crash from Merrill Lynch helped lead him to a career as a blogger, that he publicly begged Facebook for a solution. Apparently, being barred from the securities industry doesn't keep a guy from being inundated with friendship requests from complete strangers.

"I've occasionally thought about trying to solve this problem by 'unfriending' everyone who isn't actually my friend, but that's too horrible to contemplate," Mr. Blodget wrote on his Web site, Silicon Alley Insider, on Sunday. "I don't know how I'd get through the day if Facebook kept sending me e-mails about how people I didn't even know were 'unfriending' me."

Mr. Blodget asked Facebook to develop new friendship levels that would let users sort their acquaintances by degree of separation. He suggested categories like " 'personal friends' or 'work friends' or 'extra special friends' or 'BFFs' or 'friends you want to hear meaningless trivia about all day long,' " and implored, "Please give me the ability to put friends in these groups without telling them I have done so."

On Facebook, as in life, no unfriending is as fraught with pitfalls as the one you really mean. Rachel Heavers, a stay-at-home mother in Arlington, Va., found that out when she angrily deleted a lifelong pal, "Marie," in December during what she described as "a hormonal moment."

"Our first kids were born two months apart, and we are both pregnant with our second, which are due three days apart," she said.

The two had a falling out in December after Marie (her middle name) insisted that Mrs. Heavers's daughter had swallowed one of her earrings (she hadn't). The friends wound up arguing in the emergency room, and later agreed to take a break from each other.

Mrs. Heavers soon tired of seeing Marie on Facebook. During an emotional late-night moment, she clicked the "remove" button, expecting never to speak to Marie again.

"Now I really, really regret it," said Mrs. Heavers, who is starting to reconcile with Marie but afraid to send out a new friendship invitation to her on Facebook: "I'm not sure if she's even noticed yet that I've unfriended her."

Lecture 24
Social Hierarchy

From a cognitive perspective, a key part of our normal social interactions concerns constantly understanding or appreciating where you are in relative social standing to others in the group. What we turn to in the final lecture of the course concerns how our standing within a group has a strong and powerful affect on how we behave.

In the first article for today, *The Rich Are More Oblivious Than You and Me*, we learn how "power" can have a disinhibiting effect on our behavior. That is, when we're at the top of the social hierarchy in a given group, we're much less likely to regulate or monitor our behaviors and actions.

In class, we'll see some rather amusing data that support this point.

In the second article for today, *What's So Funny? Well, Maybe Nothing*, we turn from the issue of how those at the top of a hierarchy behave, and instead consider how those NOT at the top of a hierarchy behave. In this case, it revolves around the way we tend to use laughter as a way of signaling our lower positions in a social heirarchy.

The basic idea here is that we are more prone to laugh at someone's joke if that person is above us in social status. In other words, when you find yourself laughing at something your professor says in class, the astute professor needs to appreciate your laughing may not be due to a good joke, but rather, the fact that in class the professor is at the top of the social hierarchy.

April 4, 2007

OP-ED CONTRIBUTOR

The Rich Are More Oblivious Than You and Me

By RICHARD CONNIFF

Old Lyme, Conn.

THE other day at a Los Angeles race track, a comedian named Eddie Griffin took a meeting with a concrete barrier and left a borrowed bright-red $1.5 million Ferrari Enzo looking like bad origami. Just to be clear, this was a different bright-red $1.5 million Ferrari Enzo from the one a Swedish businessman crumpled up and threw away last year on the Pacific Coast Highway. I mention this only because it's easy to get confused by the vast and highly repetitious category "Rich and Famous People Acting Like Total Idiots." Mr. Griffin walked away uninjured, and everybody offered wise counsel about how this wasn't really such a bad day after all.

So what exactly constitutes a bad day in this rarefied little world? Did the casino owner Steve Wynn cross the mark when he put his elbow through a Picasso he was about to sell for $139 million? Did Mel ("I Own Malibu") Gibson sense bad-day emanations when he started on a bigoted tirade while seated drunk in the back of a sheriff's car? And if dumb stuff like this comes so easy to these people, how is it that they're the ones with all the money?

Modern science has the answer, with a little help from the poet Hilaire Belloc.

Let's begin with what I call the "Cookie Monster Experiment," devised to test the hypothesis that power makes people stupid and insensitive — or, as the scientists at the University of California at Berkeley put it, "disinhibited."

Researchers led by the psychologist Dacher Keltner took groups of three ordinary volunteers and randomly put one of them in charge. Each trio had a half-hour to work through a boring social survey. Then a researcher came in and left a plateful of precisely five cookies. Care to guess which volunteer typically grabbed an extra cookie? The volunteer who had randomly been assigned the power role was also more likely to eat it with his mouth open, spew crumbs on partners and get cookie detritus on his face and on the table.

It reminded the researchers of powerful people they had known in real life. One of them, for instance, had attended meetings with a magazine mogul who ate raw onions and slugged vodka from the bottle, but failed to share these amuse-bouches with his guests. Another had been through an oral exam for his doctorate at which one faculty member not only picked his ear wax, but held it up to dandle lovingly in the light.

As stupid behaviors go, none of this is in a class with slamming somebody else's Ferrari into a concrete wall. But science advances by tiny steps.

The researchers went on to theorize that getting power causes people to focus so keenly on the potential rewards, like money, sex, public acclaim or an extra chocolate-chip cookie — not necessarily in that order, or frankly, any order at all, but preferably all at once — that they become oblivious to the people around them.

Indeed, the people around them may abet this process, since they are often subordinates intent on keeping the boss happy. So for the boss, it starts to look like a world in which the traffic lights are always green (and damn the pedestrians). Professor Keltner and his fellow researchers describe it as an instance of "approach/inhibition theory" in action: As power increases, it fires up the behavioral approach system and shuts down behavioral inhibition.

And thus the Fast Forward Personality is born and put on the path to the concrete barrier.

The corollary is that as the rich and powerful increasingly focus on potential rewards, powerless types notice the likely costs and become more inhibited. I happen to know the feeling because I once had my own Los Angeles Ferrari experience. It was a bright-red F355 Spider (and with a mere $150,000 sticker price, not exactly top shelf), which I rented for a television documentary about rich people. It came with a $10,000 deductible, and the first time I drove it into a Bel-Air estate, the low-slung front end hit the apron of the driveway with a horrible grating sound that caused my soul to shrink. I proceeded up the driveway at five miles an hour, and everyone in sight turned away thinking, "Rental."

The bottom line: Without power, people tend to play it safe. Given power, even you and I would soon end up living large and acting like idiots. So pity the rich — and protect yourself. This is where Hilaire Belloc comes in.

He once wrote a poem about a Lord Finchley, who "tried to mend the Electric Light/Himself. It struck him dead: And serve him right!" Belloc wasn't tiresomely suggesting that the gentry all deserve a first-hand acquaintance with the third rail, as it were, but merely that they would be smart to depend on hired help. In social psychology terms, disinhibited Fast Forward types need ordinary cautious mortals to remind them that the traffic lights do in fact occasionally turn yellow or even, sometimes, red.

So, Eddie Griffin: next time you borrow a pal's car, borrow his driver, too. The world will be a safer place for the rest of us.

Richard Conniff is the author of "The Natural History of the Rich."

March 13, 2007

FINDINGS

What's So Funny? Well, Maybe Nothing

By JOHN TIERNEY

So there are these two muffins baking in an oven. One of them yells, "Wow, it's hot in here!"

And the other muffin replies: "Holy cow! A talking muffin!"

Did that alleged joke make you laugh? I would guess (and hope) not. But under different circumstances, you would be chuckling softly, maybe giggling, possibly guffawing. I know that's hard to believe, but trust me. The results are just in on a laboratory test of the muffin joke.

Laughter, a topic that stymied philosophers for 2,000 years, is finally yielding to science. Researchers have scanned brains and tickled babies, chimpanzees and rats. They've traced the evolution of laughter back to what looks like the primal joke — or, to be precise, the first stand-up routine to kill with an audience of primates.

It wasn't any funnier than the muffin joke, but that's not surprising, at least not to the researchers. They've discovered something that eluded Plato, Aristotle, Hobbes, Kant, Schopenhauer, Freud and the many theorists who have tried to explain laughter based on the mistaken premise that they're explaining humor.

Occasionally we're surprised into laughing at something funny, but most laughter has little to do with humor. It's an instinctual survival tool for social animals, not an intellectual response to wit. It's not about getting the joke. It's about getting along.

When Robert R. Provine tried applying his training in neuroscience to laughter 20 years ago, he naïvely began by dragging people into his laboratory at the University of Maryland, Baltimore County, to watch episodes of "Saturday Night Live" and a George Carlin routine. They didn't laugh much. It was what a stand-up comic would call a bad room.

So he went out into natural habitats — city sidewalks, suburban malls — and carefully observed thousands of "laugh episodes." He found that 80 percent to 90 percent of them came after straight lines like "I know" or "I'll see you guys later." The witticisms that induced laughter rarely rose above the level of "You smell like you had a good workout."

"Most prelaugh dialogue," Professor Provine concluded in "Laughter," his 2000 book, "is like that of an interminable television situation comedy scripted by an extremely ungifted writer."

He found that most speakers, particularly women, did more laughing than their listeners, using the laughs as punctuation for their sentences. It's a largely involuntary process. People can consciously suppress laughs, but few can make themselves laugh convincingly.

"Laughter is an honest social signal because it's hard to fake," Professor Provine says. "We're dealing with something powerful, ancient and crude. It's a kind of behavioral fossil showing the roots that all human beings, maybe all mammals, have in common."

The human ha-ha evolved from the rhythmic sound — pant-pant — made by primates like chimpanzees when they tickle and chase one other while playing. Jaak Panksepp, a neuroscientist and psychologist at Washington State University, discovered that rats emit an ultrasonic chirp (inaudible to humans without special equipment) when they're tickled, and they like the sensation so much they keep coming back for more tickling.

He and Professor Provine figure that the first primate joke — that is, the first action to produce a laugh without physical contact — was the

feigned tickle, the same kind of coo-chi-coo move parents make when they thrust their wiggling fingers at a baby. Professor Panksepp thinks the brain has ancient wiring to produce laughter so that young animals learn to play with one another. The laughter stimulates euphoria circuits in the brain and also reassures the other animals that they're playing, not fighting.

"Primal laughter evolved as a signaling device to highlight readiness for friendly interaction," Professor Panksepp says. "Sophisticated social animals such as mammals need an emotionally positive mechanism to help create social brains and to weave organisms effectively into the social fabric."

Humans are laughing by the age of four months and then progress from tickling to the Three Stooges to more sophisticated triggers for laughter (or, in some inexplicable cases, to Jim Carrey movies). Laughter can be used cruelly to reinforce a group's solidarity and pride by mocking deviants and insulting outsiders, but mainly it's a subtle social lubricant. It's a way to make friends and also make clear who belongs where in the status hierarchy.

Which brings us back to the muffin joke. It was inflicted by social psychologists at Florida State University on undergraduate women last year, during interviews for what was ostensibly a study of their spending habits. Some of the women were told the interviewer would be awarding a substantial cash prize to a few of the participants, like a boss deciding which underling deserved a bonus.

The women put in the underling position were a lot more likely to laugh at the muffin joke (and others almost as lame) than were women in the control group. But it wasn't just because these underlings were trying to manipulate the boss, as was demonstrated in a follow-up experiment.

This time each of the women watched the muffin joke being told on videotape by a person who was ostensibly going to be working with her on a task. There was supposed to be a cash reward afterward to be allocated by a designated boss. In some cases the woman watching was designated the boss; in other cases she was the underling or a co-worker of the person on the videotape.

When the woman watching was the boss, she didn't laugh much at the muffin joke. But when she was the underling or a co-worker, she laughed much more, even though the joke-teller wasn't in the room to see her. When you're low in the status hierarchy, you need all the allies you can find, so apparently you're primed to chuckle at anything even if it doesn't do you any immediate good.

"Laughter seems to be an automatic response to your situation rather than a conscious strategy," says Tyler F. Stillman, who did the experiments along with Roy Baumeister and Nathan DeWall. "When I tell the muffin joke to my undergraduate classes, they laugh out loud."

Mr. Stillman says he got so used to the laughs that he wasn't quite prepared for the response at a conference in January, although he realizes he should have expected it.

"It was a small conference attended by some of the most senior researchers in the field," he recalls. "When they heard me, a lowly graduate student, tell the muffin joke, there was a really uncomfortable silence. You could hear crickets."