$\text{Spring 1992}$

$\text{Notice for Students}$

Rebecca Burnham has your stipend check, if you used to get it from Vicki Shroff. Rebecca also has all reimbursement checks from the Neurosciences Program. Rebecca is in MSOB Room X309, phone 3-9855, email hf.rmb.

$\text{A Note from Jack}$

Deeply felt thanks to all of you for the wonderful stepping-down party. The CD’s are perfect for an old fart like me who tried to be hip when your age. If such things wear out, they are already much worn. In the words of the immortal bard Duke Ellington, “It don’t mean a thing if it ain’t got that swing.” Keep swingin’!

$\text{Program News}$

$\text{A Change in Administration}$

For those of you in search of stipend checks, Vicky Shroff is no longer the administrator for the Neuroscience Program. A warm thanks to Vicky for all that she has done these past years. Her efforts to aid the program’s students have been tremendously appreciated. Rebecca Burnham is the new administrator for the Neurosciences Program. For those of you who haven’t had a chance to meet her, she has been working with Howard since February. She is in room X-309 of the Medical School Office Building and you should give her a ring before going over. Her phone number is 723-9855, and you can send her e-mail at HF.RMB@Forsythe.

We also want to thank E.J. Chichilnisky and Sam Wang, who both retired as Neuroscience student representatives last quarter. It was thanks to both their efforts that students have an increasing input into the running of the program, and that the retreat was such a great success last year. The new student representatives are Amy Bohner (5-8788, e-mail bohner@popserver) and Mireya Nadal-Vicens (5-6362, e-mail mireya@psych).

$\text{A Thanks from Howard}$

For all of you who took time out of your busy research schedules to entertain and host the prospective students—a big thanks! This year’s campus visit was a real success, and many of the prospective students went out of their way to express how much they enjoyed their stay here. Thanks is also due to Rebecca, who on very short
notice did an impressive job of organizing the visit.

Journal Club(s)

Everyone in the Neurosciences Program should register for Neurosciences 300 for 1 unit. By May, everyone should have presented papers at journal club twice this year, and the sign-up sheet for the spring quarter will be passed out again this Tuesday for those who haven’t signed up yet. All of the students in the program should come to journal club every Tuesday, and post-docs and faculty are encouraged to join us.

In addition to the (mandatory) Neuroscience journal club, Sue McConnell has also organized an informal Developmental Neurobiology journal club on Friday afternoons, at four o’clock in Gilbert Room 117 (ground floor, facing the court yard). Interested students, post-docs and faculty are invited to join us (wine and crackers are provided). Students who are planning to attend this journal club are also encouraged to register for it (Biology 358, 1 unit) so that Sue’s efforts will be acknowledged by the administration.

Student Poster Session

The annual student poster session will be held around the end of May. We would like to entice as many faculty as possible to come, and will choose a date with that end in mind. Any questions (yes, some students are using their poster from the Society of Neuroscience meeting) or suggestions should be brought to Amy or Mireya. The actual date for the poster session will be announced in journal club, and we plan on notifying everyone early and frequently enough to make it a real success this year.

The Neuroscience Retreat

We are planning on holding next fall’s retreat again in Monterey, given the success of last year’s event. There will be student presentations as well as invited outside speakers. We will be forming a Retreat Committee to choose the speakers and organize the event. Those with nominations for outside speakers (three in Neuroscience and one of general interest), or anyone interested in volunteering for the committee, should contact Amy or Mireya.

--M.N.V.

Confronting Career Choices

The annual Women in Medicine and Medical Sciences Conference will return to campus on May 2. Graduate faculty and students are encouraged to attend the day-long meeting, which will feature workshops on topics ranging from “Maternity Issues in Medicine” to “Career Choices for Ph.D.’s” and “Learning to Protect Oneself from Harassment.” Featured speakers include Dr. Frances Conley, who will give advice to women entering medical careers; Dr. Ellen Weaver, president of the Association for Women in Science; and Dr. Dora Goldstein, who will present a pictorial history of women in medicine.

In the past, graduate students may have avoided the conference because it focused too heavily on topics that were only of interest to medical students. This year an effort has been made to include issues that are relevant to women in basic research careers.

Watch the walls of the medical school for posters giving complete information about the conference’s schedule and advance registration.

—A. B.

NFP Disclaimer

The figures in this NFP represent purely fictional characters, and any resemblance with faculty members, living or dead, is purely coincidental. (But darn impressive nonetheless, don’t you think?)
Spring Entertainment Section

Standing on the Rock

While hundreds of tourists travel to Alcatraz Island each day, most Bay Area residents have never been there. Unlike many such attractions, the trip to Alcatraz is something that everybody can enjoy, making it the perfect place to take out-of-town guests who want to see San Francisco. Traveling to an island that houses what was once the nation’s toughest prison might not seem like a great way to spend an afternoon, but there are several reasons why the trip is worthwhile. First, the island itself is beautiful (if you don’t look at the prison), and provides visitors a 360° view of the San Francisco Bay, including the City, the Marin headlands, and the Golden Gate and Bay bridges. Second, the prison is actually very interesting. The best way to learn about it is to take the self-guided audio tour. The tape, narrated by people who worked in the prison or served sentences there before it closed in the 1960’s, evokes a creepy atmosphere as it leads you around the jail house, telling you about famous inmates Al Capone and the Bird Man of Alcatraz. The best parts of the tour are learning about the three prisoners who may have escaped, and getting a chance to stand inside the solitary confinement cells.

Make sure you pick a sunny day to travel to Alcatraz, so that you can appreciate the great view, and won’t have to walk over rugged terrain in the rain.

To get there: The Red and White Fleet ferries leave from Pier 41 every 30 minutes from 9:45 am to 2:45 pm daily. Call 800-229-2784 for information and advance ticket purchase, which is recommended. Tickets are $8.50 ($10.50 for phone orders) including the ferry trip and audio tour.

--AB

Beaches!!

We all know that spring is the best season for beaches in Northern California. There’s more sun, less fog, and fewer people than if you wait until Memorial Day. You also have the thrill of ditching class to get there! (Hint: don’t be seen the next day sporting sandals and a new tan.)

Here’s a partial and highly subjective list of favorite beaches and why I like ‘em. Of course, some friends, volleyball, and a cooler will make any beach a winner!

San Gregorio  Big caves, a wide strip of sand, and nice flat spots for volleyball. Gets very crowded on the weekends. To avoid paying the $5 parking fee, leave your car at the intersection of Rts 1 and 84. It’s free, legal and 200 yards to the beach.

Half Moon Bay  I haven’t found a beach I really like here, but there’s a middling one with nice waves just south of the big stone jetty. Disadvantages—the noise from Route 1, which is only a few yards away.

Stinson Beach  I’ve never actually been there, but how could I leave it off the list? In Marin (north of the Golden Gate), rumored to be vast but windy. Route 1 has finally been repaired up there so you can get there fairly quickly. I hear there’s a pub in town called the Pelican which has quite a selection of beery beverages.

Pt. Reyes Seashore Two hours north of Stanford, this National Park has beautiful vistas and a dramatic rocky coast, with sand beaches along its north side. For a small park, it has some really nice light hiking. Just south of Pt. Reyes is a rocky beach called Agate Beach. At low tides this has tidepooling as good or better than Moss Beach. And it’s much larger.

Pescadero  A small beach only 40 minutes away, without much sand but with beautiful anemone flats at its northern tip at low tide. Its best feature is its location: only five minutes from Duarte’s restaurant in Pescadero. If you
haven’t been to Duarte’s, you absolutely must go. This place is the soup, pie, and coffee capital of the world (or at least my world).

Moss Beach (Fitzgerald Marine Preserve). Best tidepooling within an hour’s drive. You can also stroll in eucalyptus groves atop striking sand cliffs, and survey the beach for its interesting rock formations. Bring a guidebook to intertidal species, and scuba booties or sneakers you don’t mind getting really wet. Go on a sunny day; you’ll want to spend hours, but the cool wind off the ocean may drive you in early. Located just a few miles north of Half Moon Bay.

Santa Cruz. A different kind of beach experience. A beach John Muir might enjoy less than, say, William S. Burroughs. For those that haven’t been, it’s a nice white sand beach located in the middle of one of the sleaziest beach towns around. Don’t get me wrong—the pier is great; but last time I was there I watched some policemen chase and tackle one of the many people who were on the beach enjoying more than just its natural beauty.

Capitola Beach. Just north of Santa Cruz, this is a really nice spot surrounded by the bars, shops, and restaurants of a small but interesting beach town. Deep white sand, volleyball nets, waves big enough to surf. This is really a nice place for a beach party!

Playa Inominata. As far as I know, this beach is nameless, and I hate to give it away because I love it so much. At low tide, you can walk there by heading south from San Gregorio. But it’s much more fun to drive south on Rt 1, park in the big turnoff overlooking the ocean, and ignore the No Trespassing signs to scramble down the sand cliffs to the beach. The cliffs are 300 feet here, and there are many trails, only one of which goes all the way down, so choose wisely. The beach is always empty, with lots of shells, seal bones, and a huge expanse of white sand. Don’t get caught past sundown—it’s almost impossible to find your way back up in the dark. You’ll have to build a bonfire and enjoy the night!

--DF

Springtime Camping

Now that spring has arrived, you should be doing more than just wasting your time (and your $$) helping to melt the snow on the ski slopes. Take advantage of that melting snow-pack! (No, I don’t mean longer showers in the morning.) All that snow melt has to go somewhere, right? This means that waterfall season is here, and with a vengeance, given this year’s excellent winter snowfall in the Sierras. Below I have listed some spring camping and hiking options in the nearby area for those of you who both 1) need a vacation and 2) don’t think it’s natural to camp in the snow. Though not all of them offer the waterfall option, all of the following destinations have less smog than Palo Alto.

Sequoia National Park

Now while it is true that Sequoia trees, the earth’s heaviest living organism (and second largest, next to that fungus living in Michigan), are able to live only between about 5000 and 8000 feet above sea level (read DEFINITELY snow in April), there are very nice trails and beautiful waterfalls at lower elevations. The Panther Creek Trail, which runs along the middle fork of the Kaweah River is right at the park’s entrance, and begins at an elevation of about 2000 feet. This trail will certainly be snow-free at this time of year and, in fact, should have fragrant manzanita blossoms. The park is usually pretty free from crowds, certainly compared to Yosemite. Even if there is a lot of snow still in the mountains, you should be able to drive up for the day and see the General Sherman tree, the runner-up to the illustrious fungus.

Call (209) 565-3341 for general park information, and (209) 565-3306 for back country reservations.

King’s Canyon National Park

This park is continuous with, and just to the north of Sequoia. It also has Sequoia trees and the associated breathtaking mountain scenery. Call the number listed above for Sequoia National Park, as these two parks are administered as one.
Yosemite National Park

Well, the Yosemite Nat'l Park subway system should be up and running in early spring this year, and that should make the commute into the back country a little easier... just kidding. This park is one of the most breathtaking sights in the country, and surprisingly, if you do get out of the main valley and into the back country (a two-mile hike will suffice), you may not see any other campers or hikers. Don't be hesitant about heading a little north of the actual park into the National Forest. The Tuolmne Meadows area has some nice glacier-carved valleys of its own and can provide less popular but equally awe-inspiring alternatives to hikes and campsites that are closer to the valley. This is also a great place for people serious about rock climbing, or so I'm told, so bring your colored ropes and those fancy clip things (they look like key rings) if you've got 'em.

Call for general announcements at (209) 372-0264 and back country information at (209) 372-0285.

Death Valley

If mountains aren't your thing, you can visit the lowest spot in North America (Badwater, Death Valley, 282 feet below sea level). This is actually a wonderfully diverse park, with the standard desert scenery, miles of sand dunes, huge extinct volcanic craters, abandoned borax mines, and Scotty's Castle, a desert mansion built by this gullible old coot who was duped into investing in those famous Death Valley gold mines by a con man named Scotty. Desert flowers can be in bloom from December through April, and if you're lucky, this desert can look like an F. T. D. florist's shop.

Call (714) 786-2331 for information.

Big Sur

One of the closer destinations on this list, Big Sur offers a chance to hike and camp in California's coastrange. Both fall and spring are supposed to be the best times of the year to visit Big Sur, because the fog is likely to be at a minimum. The privately owned campgrounds right on Highway 1 are good and convenient, but pricey. Inquire about the back country camping at the U. S. Forest Service ranger station located just south of the Big Sur/Pfeiffer State Park entrance on Route 1. Finally, Big Sur is also notable for the reason that is the only place on the list where you can go to the beach and surf cast for dinner during the day, and then set up camp in the forest that night. Not a bad compromise, huh?

Call the National Forest Service Big Sur station at (408) 667-2315 for more information or for weather conditions.

Big Basin Redwoods State Park

This one is located just south of Pescadero State Beach, 20 miles north of Santa Cruz and east of Ano Nuevo State Reserve. The park has the distinction of being the oldest California State Park, having been established in 1902. Though I've heard much praise for this park, I have not been there myself, but its close proximity makes it a pretty easy trip!

Call (408) 338-6132 for information.

Angel Island

The other island in San Francisco Bay has ferry service from S. F. (call 526-2896 for the schedule) and Tiburon (435-2131). There is overnight camping on the island, but it is difficult to get information on this subject. Try calling 435-1915 and hope they have a more informative message than the one I got when I called to inquire about camping.

—T.O.
Restaurant Reviews

Il Fornaio
520 Cowper St, Palo Alto

So Italian, so good.

Being a native Italian, I am very fond of Italian food and quite “picky” about Italian restaurants. First, let me give you two important rules of the thumb when approaching Italian cuisine: 1) a good Italian restaurant should NOT smell of garlic (i.e. you should not be able to smell garlic three blocks away from it) and 2) you should not find “pasta with Alfredo sauce” on the menu. Prior to coming to the States, I didn’t know this dish existed. When I tried it, I found it to be a pretty lousy mixture of whipping cream and cheese. Do not expect good Italian restaurants to be cheap (restaurants are pretty expensive in Italy as well). But even if you are on a graduate student budget, you should make an effort and try “Il Fornaio” at least once. The “fancy” setting is not my favourite, but the aromas emanating from the wood-burning oven makes you forget about the surroundings and concentrate on what you are eating. Another peculiarity of Italian restaurants in California is the olive-oil filled cup. Although it’s not strictly authentic, I can never resist dipping the exceptionally good bread that comes with it, while waiting for the main dish. Il Fornaio’s menu is divided into “antipasti” -literally what comes before the meal-, a selection of pastas -that we in Italy eat as first course-, followed by a selection of meat and fish. They also have a daily menu that is sometimes worth looking at. I would definitely suggest to try one of the antipasti, like bruschetta bread or fried calamari, or my favourite, eggplant with feta cheese. Their pastas are okay, none exceptionally good but above average, particularly the “pennette all’amaticiana”. Their “specialita’ dal girarrosto toscano” are all very good, especially the chicken. Their wine list is not great and you are often better off with a Californian Cabernet than an Italian Sangiovese. Do make reservations. It is one of the most popular restaurants in Palo Alto and is always very crowded. Buon appetito!

—FC

Lytton Coffee Roasters
401 Lytton Ave. Palo Alto

This new coffee house has delicious coffee and a warm ambiance due to the proprietors who do their best to make you feel welcome. They roast their own coffee every day and feature four different varieties of brewed coffee to serve yourself. They also have the requisite espresso and cappucino coffees, and tables to sit outside and enjoy the newly arrived nice weather!

—BW

The Emerald Garden
1550 California, between Polk & Larkin
San Francisco (415)673-1155

This intimate little restaurant used to be an alley between buildings before a roof was added and the inside finished. Here you can find delicious Vietnamese food with intriguing names like “Evil Jungle Prince with Chicken” (try it!). The service can be a little slow sometimes, but don’t let that scare you away from some of the most flavorful food around. This restaurant is a little more expensive than it used to be (around $8 for an average entree and $5 for an appetizer) but it is perfect for special occasions when you want a nice restaurant with real cloth tablecloths and napkins.

—BW

ALL-L-R-ITE!!!
**NFP American Kulture Kwiz**

Match the selected members of Stanford’s Neuroscience Program with their most appropriate American Gladiator moniker. Match 100% and you watch too much late-night TV!

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<thead>
<tr>
<th>Faculty Member</th>
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<td>__ Howard Schulman</td>
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*Figure 1. Gladiator Pesto with pugile stick.*
In Praise of Imperfection: My Life and Work
by Rita Levi-Montalcini

This is a book by a person who was clearly born to be a scientist. Rita Levi-Montalcini tells her life story with an incredible modesty combining history, politics, personal family history, and an all-star cast of scientists who were friends and colleagues. She begins by tracing her early life, in which a dear friend's death inspired her to study medicine and become a doctor. It was unusual for a woman to pursue such a career in this era, but she insisted and got what she wanted. As a medical student, she did an internship counting the number of neurons in the spinal ganglia of mice of the same and different broods. She was then assigned to study "how, and by means of what processes, the convolutions of the brain of human fetuses are formed." This project was a total disaster from the start, and her Master was convinced she was inept. (This can be an inspiration to all of us, I guess!) Then came the magic assignment, to study nerve cells grown in vitro. This research ignited her interest in science and it never ceased. Despite being dismissed from her academic position at Italy's Institute of Anatomy and barred from the practice of medicine because of anti-Jewish racial laws introduced by the Fascists, she did not allow her work to be interrupted. After a brief interlude in Belgium, she returned to Italy.

This is when her story becomes incredible. This section of the book is called "The Difficult Years" and that is putting it mildly. She tells of setting up a makeshift laboratory in her bedroom and combing the hills trying to find farmers with fertilized eggs to conduct her experiments. She would beg people for eggs "for her babies" (although she had none) and would ask if there was a rooster in the hen house since fertilized eggs are "more nutritious." After the surgery on the chick embryos, she would remove the embryo and use the rest of the egg for omelets! She had trouble publishing any results, however, because papers by Jews were not accepted by Italian journals. The attitude I find most amazing is that she faces the memory of this time with no apparent bitterness, and she even gives the difficult times some credit for her accomplishments. One particular passage demonstrates this:

"Many years later, I often asked myself how we could have dedicated ourselves with such enthusiasm to solving this small neuroembryological problem while German armies were advancing throughout Europe, spreading destruction and death wherever they went and threatening the very survival of Western civilization. The answer lies in the desperate and partially unconscious desire of human beings to ignore what is happening in situations where full awareness might lead one to self-destruction. Somehow she managed to not only survive, but to thrive in this climate of antagonism."

At the end of the war she spent a lot of time as a doctor caring for the war-wounded. This experience was what finally led her to decide on research as a full time pursuit. The helplessness she felt watching all of those people die despite her best efforts was more than she could bear. When presented with the opportunity to travel to St. Louis to study with Viktor Hamburger, she immediately accepted.

Her account of her research that led to the discovery of nerve growth factor (NGF) is full of serendipity, careful observation, and a great deal of enthusiasm and excitement. She takes the reader through each turn of events that revealed the existence of this interesting protein. It was also interesting that her collaboration with Stan Cohen and some of his careful observations also led to the discovery of epidermal growth factor (EGF). This was because Stan noticed that mice injected with NGF-containing extract seemed to have precocious eye-opening, due to early maturation of the epidermic strata of the eyelid.

Toward the end of the book, Rita Levi-Montalcini begins to focus on other things, including a discussion of the differences in Italian and American science, her subsequent interests in the structure and function of the human brain and how that relates to cognition, and touching tributes and reminiscences of friends who have
They’re Not Dumb, They’re Different—
Stalking the Second Tier
by Shyla Tobias
(Published by Research Corporation, a foundation for the advancement of science, 94 pp.)

This independently funded book, called an “occasional paper,” probably isn’t available in the local bookstore. I came across a largely favorable review of it in Science, and sent for a copy. It addresses the question “what turns people off science?”

The author states that she was motivated to write the paper based on a projected shortfall in trained U.S. scientists in the coming decade, and by what she perceives is a general decline in scientific literacy in the public. The “second tier” of her title is made up of people who are “smart enough” to go into science, and who have had adequate secondary school preparation, but choose not to pursue science at the college level. Tobias is not a trained scientist, and the passion with which she presents her conclusions might lead one to suspect that she herself is a former member of the “second tier.”

Her methodology is intriguing, if not highly scientific: she selected a group of “auditors,” people who had achieved advanced degrees in non-science fields, and had them take introductory science courses at a local state university. The journals they kept during this exercise and Tobias’ discussion of their impressions form the major part of this book.

Some of the auditors’ comments were surprising in how positive they were about science the second time around. Without exception, all of the auditors liked the subject material, although they found it extremely challenging. Some of their other complaints can hardly be described as new or surprising to anyone who has ever taken a course (in any field) at the college level: too much material covered in too short a time, overemphasis on the “how,” rather than the “why,” endless problem sets which seemed to be the be-all and end-all to the course, at the expense of concepts or “discussion.”

But the biggest criticism leveled at introductory science courses was not at the material, but at the other people in the class. Every auditor described his or her fellow students as overly aggressive and competitive, talked about a complete lack of contact between professor and student, and lamented a “lack of community.” Material was taught for the exams only, and that was all students cared about. No one ever talked about the concepts after class. What mattered was not how a student did in an absolute sense, but how he did in relation to everyone else.

The book is long on anecdotes, but short on suggestions for improvement. For example, the criticism of weekly problem sets seemed very short-sighted to me. A discussion of how a twin could leave the earth, travel close to the speed of light, and come back younger than his brother would be interesting in a physics class, but it is no substitute for solving problems using the Lorentz transformations.

One might also argue that the existing “competitive” system doesn’t do badly: it selects for those who will succeed and thrive in the “real world.” Competition only gets worse after school is over. Perhaps these auditors made the right choice: science wasn’t for them.

But the author’s contention is that science needs these people too, not just because of some “projected shortfall” in college professors, but for the future of science as a whole. From the animal rights activists to the congressional auditors, there is no shortage of people who want to “get back” at scientists, a class of people they perceive as residing in an arrogant ivory tower. Efforts to get more people to take science classes or to educate the public about scientific issues may be useless, unless science is also made more accessible and more “human.” The college classroom wouldn’t be a bad place to start.

--KA

nfp/9
“L’illusion psychosomatique”  
(The psychosomatic illusion) 
by Robert Dantzer 
edited by O. Jacobe

“If you are at all interested in understanding man, you should not forget that there is a spiritual dimension underlying illness.” This sentence appears in this book of the French neuroendocrinologist Robert Dantzer. It summarizes the focus of this interesting and thought-provoking literary effort: trying to synthesize a reconciliation between body and mind as the causative agent of human disease. Dantzer criticizes modern sciences such as molecular biology and genetics for approaching disease as a purely physical process, and ignoring the psychic aspects of disease as incomprehensible. He also criticizes the psychosomatic theory of disease, saying it lacks a scientific basis for its theories of how the mind affects the body. The goal of this book is to reconcile these two points of view that scientific materialism has long kept apart.

It is reasonable to question our thinking that the mind can cause disease or affect body functions at all. We might be attributing to the mind a fictitious power simply to justify our limited knowledge of the mechanisms regulating man’s physiology. All of us ascribe psychic causes to our illnesses. But are we more likely to get sick when we are, for example, depressed or stressed out? Dantzer gives us two case studies: that of N. Cousin, a patient who recovered from an apparently incurable illness by maintaining an optimistic attitude, and that of F. Zorn, a man whose cancer was arguably caused by a chronic refusal to live (mal de vivre). Could the mental states of these patients have brought on or cured their diseases? Dantzer says yes, and explains how, using the very biological notion of stress. Stress can be loosely described as the sum of those physiological responses—from increased heart rate to secretion of hormones and neurotransmitters—that bring the body back to homeostasis after it has been perturbed. The mind (through the CNS) plays a major role in the stress response. Our brain works like a centralized comparator, much like a thermostat, building an internal representation of what happens in the periphery, and continuously updating it. When the internal representation doesn’t match information coming from the outside, stress mechanisms are activated through a complex interplay of hormones, transmitters and neural circuitry.

Could a deep depression have caused F. Zorn’s cancer? Although a number of studies point to a direct relationship between psychic depression and reduced immune system activity, stress effects on immune function are still difficult to interpret. Often we are faced with phenomena that go against common sense. Take the case of gamma interferon, a cytokine responsible for that “sense of drowsiness” that characterizes a flu. The idea that cytokines might be the mediators both of the reaction to an infection as well as the psychic and nervous components of the disease completely changes our idea of psychosomatic illness. Thus, our being stressed out before catching a flu is not the cause, but a concomitant symptom of the disease. Since our body is likely to react to the pathogen (and thus release cytokines) well before illness is manifest, the “psychic” consequences of it are noticed before the actual physical symptoms, so that we think they helped cause the flu.

The complexity of the stress reaction is not just a natural oddity. Animal survival relies upon being able to adopt multiple adaptive strategies, both physiological and behavioral, when faced with a lethal danger. Dantzer focuses here on the concept of adaptive strategies and “coping” as key to comprehending the relationship between mind and body physiology. Coping is the ability to actively fight what caused the stress. Any action that results in obtaining an expected consequence will do, because it creates a sense of “control” over the situation—just like when you honk on your horn while trapped in traffic. Both are adaptive strategies that result in reduced activation of the hypothalamic-pituitary-adrenal system, our homeostatic pivot.

But how can we apply such a concept to our everyday life? Dantzer chooses a very inter-
esting example, that of nursing homes for old people. Although well-fed and taken care of, old people living in nursing homes experience a complete lack of control over their own lives. This often results in a worsening of their physical and mental health. A series of experiments where groups of old people were given a chance to actively participate to the management of their nursing home showed a reduced mortality of about 50% and generalized better health conditions than controls. This is certainly an encouraging example of how the concepts of control and coping can lead to healthier lives.

In the last chapter, Dantzter criticizes modern medicine for having lost its interest in how the patient feels, focusing only on curing the physical illness. If pain does not simply result from the activation of peripheral receptors but constitutes a motivational state, as Bolles and Fanselow have theorized, the patient’s mind (or shall we call it brain?) occupies a fundamental role in the diagnosis of illness. Dantzter slips here on more theoretical grounds, hypothesizing the birth of a “behavioral medicine.” He uses this term to indicate therapeutic methodology in which the physician teaches to the patient the best behavioral strategy to fight his or her sickness. This hypothetical alliance between behavioral biology and medicine is seen by the author as the deus ex machina that will solve all our problems.

Although Dantzter seems quite optimistic, there is much we still don’t understand about the relationship between body and mind that we won’t be able to understand without using “dehumanized” genetics and molecular biology. The lesson psychobiology has taught us about the notions of control and adaptive strategy, however, should remain with us as co-pilots in this fascinating journey of humanity in search for self and a cure for disease.

--FC
Confessions of the Politically Incorrect

Stanford has been a pretty quiet place lately as far as animal rights is concerned, and I must say it’s nice to be able to forget controversy and do my work. The only uproar this past quarter was DLAM’s shutdown of an unspecified Stanford research lab because of an (also unspecified) animal welfare problem. I must admit I got a little nervous seeing the Daily’s Feb 4th headline, “USDA investigates treatment of animals.” Headlines like that worry me because they add fuel to the fires of the animal rights cause on campus. It doesn’t matter that in the end, the Daily’s reporting was pretty fair, or that inflammatory letters were limited to the obligatory one by extremist Lise Giraud in the Campus Report (which was admirably rebutted by Thomas Hamm). The reason is that in the Daily, as in most papers, bad press about animal research makes bigger headlines than good press. (In the Daily, incidents like this are front page items; reports of progress in science labs are relegated to the Science section, and who reads that?) The result of this skewed coverage is that accusations in the press are always better remembered than any defense.

But this is just the nature of media coverage. My real complaint is that such unequal treatment in the press reinforces a growing trend to consider animal rights positions as basically correct, and animal research as an evil (though perhaps a necessary one). It is my impression that a majority of students at Stanford, as at other universities, lean strongly towards the animal rights cause, many by virtue of the fact that they don’t get exposed to solid arguments or emotional appeals for animal research. Researchers are on the defensive, and I fear that real debate on the animal rights issue is being replaced by a peer-enforced acceptance of animal rights views. In short, I worry that animal research is becoming politically incorrect.

Now, political correctness is an overused term these days, and to criticize PC is perhaps even more trite, but I’ll risk it. The main problem of political correctness is that it is self-reinforcing. Since politically incorrect viewpoints don’t generally get aired, majority opinion slowly shifts closer to the politically correct viewpoint. And letters rebutting anti-research articles are weak responses at best, no matter how compelling their arguments. (Think of how weak Michael Dukakis looked trying to defend the perfectly rational position for why he was a “card-carrying member of the ACLU.”) If we don’t find an effective way to air our views, public opinion will keep shifting towards animal rights, and it will become tougher and tougher to do animal research at all.

I have two proposals for actions we in the research community can take to stem this tide. First, we can talk more about our research and why we do it. This will help dispel the myth of researchers’ coldness and cruelty, which has been an effective weapon of the animal rights movement. Academic debate can convince people intellectually that animal research is necessary; but only glasnost by researchers can convince them emotionally that we are caring people who can be trusted with animals’ lives. This is a difficult task, I know—I’m a great avoider of talking about research myself. But I am convinced that avoiding the topic hurts us in the long run, by allowing animal rights ideas to run unopposed in people’s minds.

My second proposal is more concrete. One of the most effective ways to promote the necessity of research here on campus is to provide positive research experiences for undergraduates. Now, you might think that undergrads who seek research assistantships would naturally be pro-research, but this doesn’t seem to be true. According to a March 4 Daily article, “Undergrad researchers ponder laboratory animal use,” many students are ill-prepared for the realities of animal experiments. In the article, one student tried to justify experimentation by asking what percentage of basic research had any use: “Is it 10 percent or 90 percent? I don’t know. If it’s 10 percent, than it’s a big problem for me.” This same student felt deceived and resentful when he learned how biological knowl-
edge was actually gathered (he mentioned neuroscience in particular). Another student said that whereas 30 years ago nobody questioned the moral status of animals, today “not everyone’s so sure.”

These are healthy sentiments for people asking themselves if they really want to begin a career in biomedical science. But if we don’t help these students work through these feelings, it is researchers who are in trouble. Think about what happens when these students share their bad experiences with friends, spreading a mistrust of researchers that is very difficult to dispel. More unlikely, a student who leaves a lab with the impression that animals were treated callously, and for little scientific benefit, could volunteer to share his or her experiences with animal rights groups. The students quoted in the article have serious doubts about the necessity for and practice of animal research. If these are the opinions of senior biology majors, what are the opinions of other Stanford undergrads?

The same Daily article gave a lot of attention to the story by one student of an unsympathetic PI who didn’t treat the student’s reservations about animal research seriously enough. I think that most PIs who are interested enough to encourage undergrads to work in their labs also take the time to help them through these difficult decisions about animal research. (I had a PI as an undergrad who did just that for me.) But perhaps we can do something concrete to ensure that students get time to think about the necessity of the research, and to observe the procedures that are done in the lab BEFORE they get involved in research themselves.

To introduce students to the process of science, and to prepare them for research, I propose that undergrads be required to do a quarter of directed reading on the subject they’ll be researching before they begin experiments. Students should also use that quarter to work with grad students or postdocs to find out exactly what procedures are involved with their work. Then, at the end of that quarter, if they want to do the research, they will be mentally prepared for it. Maybe it will make it a better experience for many. For students especially concerned about animal use issues, I suggest referring them to Thomas Hamm’s course “Introduction to the Humane Use of Laboratory Animals.”

Giving students a positive exposure to science will almost certainly increase their support for animal research. Last week, US Senator Strom Thurman reversed his long-standing view against fetal tissue research after his daughter developed diabetes, one of the diseases which stands high on the list of conditions for which fetal tissue research may provide effective treatment. After his impassioned plea for her future on the Senate floor, that body passed a fetal tissue research bill by a majority sufficient to override presidential veto. The same turnaround can happen here, if we can convince people of the importance of what we do, and of the caring with which we all try to do it.

If we don’t speak up in these ways, then most students will continue to hear only animal rights views, and to drift in their own views towards an animal rights perspective. Things have been quiet at Stanford lately, but how long will they stay that way if the research community sits back and lets student opinion drift silently but steadily away from support of research?

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Spring Quarter Courses of Interest to Neurosciences Students...

...who have yet to turn in their study cards. Classes fulfilling requirements are marked with an asterisk.

Biochemistry 201: Advanced Molecular Biology (P. Brown) 5 units. This course is an up-to-date introduction to a wide range of current topics in molecular biology given by staff from this multi-Nobel prize winning department. Section 202 is for medical students only, while 201 is open to all. The time, Mon-Fri at 11 am, isn't convenient, but the lectures are available on videotape in the Fleischmann labs.

Biology 121: Cell Biology (R. Kopito) 4 units. A basic introduction to the field.

Biology 358: Developmental Neurobiology Seminar (S. McConnell) 1 unit. See the Program News section to learn how to sample fine wine and discover the secrets to cell fate at the same time (EANABs included).

Developmental Biology 210/Bio 208: Developmental Biology (M. Scott) 5 units. Twice a week seminars are taught by staff and invited guests. One does not need to be registered in order to attend the Friday discussion sections. In the past, invertebrate models have predominated.

Neurology 201: Clinical Demonstrations in Neurology (staff) 1 unit.

*Neurobiology 218: Neural Basis of Behavior (Knudsen and Newsome) 4 units. This is the second time that this advanced seminar has been offered. It is designed to explore principles of information processing by the vertebrate CNS, and the relationship of functional properties of neural systems with perception and behavior. Particular attention is given to the visual and auditory systems. The course involves study of original papers, student presentations, and group discussions. No final exam.

*Neurosciences 300: Journal Club (Us) 1 unit. See the Program News for the current scoop on this familiar title.


Psychology 203: Visual Sensing by Humans and Computers (B. Wandell) 3 units. This course explores the application of visual perception science to the design of electronic image processors.

Psychology 228: Ion Transport (J. Wine) 3 units. This course looks at pumps, pores, charged particles and their regulation by intracellular messengers in a variety of cell types. Laboratory demonstrations and a brief hands-on introduction to patch clamping are included.

By the way, if one of these has unexpectedly piqued your interest, you can always add/drop.

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