In a recent email exchange on teaching policies in the department, Dean Vohra and I were discussing the fact that Brown has a special reputation as a place where top scholars are deeply involved in undergraduate education. He noted that the economics department in the last couple of years had been successful in hiring some terrific scholars at least in part due to the resources and vision that the administration has put in place through the Academic Enrichment Initiative. He then wondered if these changes had begun to impact the lives of our undergraduates in tangible ways. I was able to reassure him that the ideal of the university-college is indeed alive and well in the Department of Economics at Brown.

As you will see in the pages of this newsletter, last year was a banner year for the department. For the first time in recent memory we received acceptances on all three of our first-round junior offers, a testament to the department’s growing reputation as an attractive and stimulating place for young scholars to start their careers. We also brought in two world-class senior scholars. There is a clear sense among our peer departments in other universities that Brown is a place that is very much on the move in terms of the quality of our faculty as scholars. But what is most visible to our students is the broad array of new courses that we have been able to offer thanks in large part to the new hires.

All told there are eight new or substantially redeveloped undergraduate courses this year. Four of these courses are related directly to the new Commerce, Organization and Entrepreneurship initiative that was inaugurated last fall but are also excellent additions to the economics curriculum. In particular, for the first time this year we are able to offer our students courses in “Fixed Income Securities” and on “Financial Institutions”. The first is taught by Assistant Professor Lily Qiu, who is doing fascinating research on the role of large pension funds in corporate governance. The second is taught by Ross Levine, who has recently coauthored a book on bank regulation and is one of the top cited economists in the country. In addition, Ivo Welch, our senior finance hire from last year, taught this fall a substantially restructured course in Corporate Finance as well as a new course on “Business, Economics, Ethics”. The latter was a fascinating experience for Ivo and the students. It involved among other things in-class discussions with several alumni who analyzed ethical decisions they had faced as leaders in the business world. As Ivo writes in a forthcoming Faculty Bulletin article, “In the first class, I was shocked that the majority of students felt there was no social obligation to help victims of Katrina. This was deeply ingrained in the students—an automated response based on the perspective of absolute property rights. By the end of the course, student attitudes had changed significantly. They developed a significantly different and far more thoughtful perspective on ethical issues than what they had at the outset of the course.”

Among the other new courses is one that will be offered this spring by Glenn Loury, who came to us this fall from Boston University, on “Race and Inequality in the U.S.” Glenn is, of course, one of the leading intellectuals of the day on the issue of race, and also a first rate economic theorist. Among the subjects that Glenn will be discussing in this class is the role and efficacy of race-neutral measures that are being employed by a number of universities as an alternative to more traditional forms of affirmative action in order to increase the representation of underrepresented minorities on campus. This is an area in which Glenn has made important contributions including an amicus brief that was cited in the Supreme Court decision on the University of Michigan affirmative action case.

The list of new courses would not be complete without mentioning three others. George Borts taught for the first time a freshman seminar this fall on “The Welfare State in America” in which he and the students read through and discussed some important recent books on health, social security, education, housing subsidies, and child welfare. Yona Rubinstein, a visitor whose work on the economics of terrorism was written up in The Economist this summer,
taught a redeveloped course on the Economics of the Middle East. We were able to host Yona in large part through some resources made available to us through the Enrichment Initiative. And finally, Maria Carkovic, who is the new administrative director of COE and was among the top rated teachers at the Carlson School of Management before coming to Brown, will be offering a course this spring on “Current Global Macroeconomic Challenges”.

I hope you are as excited as I am about these new offerings. But it should also be evident that these new developments on the undergraduate front are importantly linked to the expansion in research capacity within the department. This is not to say that there is no tradeoff between teaching and research. While we certainly encourage our faculty to involve undergraduates in their research to the extent this is possible, for the most part there is an opportunity cost in terms of forgone research of the time spent teaching—this is the “dismal science” after all. Nonetheless, these two goals of first-class research and teaching can be pursued at the same time if we are willing to continue to do the hard work of finding and supporting those very special scholars who combine a deep curiosity about the world around them with the ability and desire to communicate their own enthusiasm to their students. The department is justly proud of what it has been able to do in this regard since the launching of the Academic Enrichment Initiative and we hope that with the support provided by Boldly Brown we will be able to continue this process.

Andrew Foster, Professor and Chair
afoster@brown.edu

Guido Imbens (Ph.D. 1991) has been appointed to a tenured position in the Department of Economics at Harvard along with his partner Susan Athey. Guido was one of two students who came from the University of Hull, Yorkshire, England with Tony Lancaster when Tony was hired in 1986. The other student was Wilbert van der Klaauw (Ph.D. 1991) and both Guido and Wilbert entered the Economics graduate program. Previously Guido and Wilbert had taken Masters degrees at Hull and then worked as Research Assistants there. They are both Dutch citizens and they had begun their undergraduate education at Erasmus University in Rotterdam. Wilbert is currently a tenured full professor in the Department of Economics at U. N. C. On graduation Guido was hired at Harvard and subsequently had tenured appointments at U.C.L.A. and U. Cal. Berkeley. Guido did his dissertation work on choice-based sampling – subsequently published in Economica—and on duration analysis, with Lancaster. Since then he has worked in many areas of applied microeconometrics but his work on causal inference and instrumental variables is widely known and cited. Particularly well known are his papers “Identification and Estimation of Local Average Treatment Effects”, Economica, 62 (2), March 1994, with J. D. Angrist and “Identification of Causal Effects Using Instrumental Variables”, Journal of the American Statistical Association, 91 (434), June 1996 with Angrist and D. B. Rubin. He was elected a Fellow of the Econometric Society in 2003. In announcing Guido’s appointment, Harvard’s Dean of the Faculty of Arts and Sciences, William Kirby, stated “Professor Imbens is a distinguished econometric theorist, applied econometrician, and empirical researcher with tremendous intellectual breadth. His methodological contributions have had a great impact on research practice in fields including labor economics, public finance, and development economics. He is also an energetic and generous colleague and an adviser who is full of ideas. He will be a fantastic resource for our undergraduates and graduate students” (quoted from the Harvard Gazette).

Notes from the Chair
continued from page 1

Attention Alumni:
A new website is being created for alumni. Please visit http://www.brown.edu/Department/Economics click on alumni, and join the new Brown Alumni Network.
Nathaniel Baum-Snow, Assistant Professor, received his AB in Economics at Harvard College in 1998. After working for two years at the Federal Reserve Bank in New York, he went on to pursue a Ph.D. in Economics at the University of Chicago. Baum-Snow's recent work focuses on understanding the evolution of land use patterns in urban areas over time. He demonstrates that highways have played an important role in aiding the spatial diffusion of the urban population in the United States since WWII. He has a background in urban economics and will be a part of the initiative in Spatial Structures in the Social Sciences.

Ashley Lester, Assistant Professor, comes to us from MIT where he recently completed his Ph.D. in Economics. His undergraduate degree was from the University of Sydney, where he was a recipient of the University medal and the Economic Society of Australia Prize. He works primarily in the area of economic growth. His research focuses on issues related to developing economies. This includes economics of the household, demography, inequality and returns to investment in public goods. She was the recipient of the National Science Foundation Graduate Research Fellowship, the Social Science Research Council Fellowship for Development and Risk and the Harvard Academy Scholars Post Doctoral Fellowship.

Nancy Qian, Assistant Professor, received her BA in Economics, Government, Mathematics and Japanese from the University of Texas at Austin in 2000. She completed her Ph.D. at MIT in June, 2005. Her research focuses on issues related to developing economies. This includes economics of the household, demography, inequality and returns to investment in public goods. She was the recipient of the National Science Foundation Graduate Research Fellowship, the Social Science Research Council Fellowship for Development and Risk and the Harvard Academy Scholars Post Doctoral Fellowship.

For Ross Levine, the study of finance is inherently multidisciplinary, linked to the law through contracts, to political science through a country’s selection and enforcement of policies and regulations, and to economics since the financial system influences the allocation of capital. “The political system and law shape the rules of the game in which banks and markets operate,” he said. “In turn, the operation of the financial system helps determine whether money gets funneled to political cronies or to people with good ideas that will help produce a flourishing economy.”

Frequently, Levine takes a global approach to his work. Struck by the fact that diet books are best-sellers in the United States while other countries lack enough food to feed their citizens, Levine’s research often flows from two questions: Why are some countries rich and others poor? Who gets to use society’s resources? “The financial sector plays a huge role” in resource allocation, he said, and can determine whether an aspiring entrepreneur in, say, Niger, has any hope of obtaining capital to get a promising idea off the ground.

Much of Levine’s professional experience has taken place outside of academia. After receiving his Ph.D. from UCLA, he worked at the Board of Governors of the Federal Reserve System (1998-90), where he conducted research on international finance and analyzed contemporary policy issues for the governors. He then moved to The World Bank (1990-97). There he led teams of economists to countries to provide policy advice and where he began researching the connections between the financial system and economic growth. In 1997, Levine moved to the University of Virginia, where he taught for two years.

Levine comes to Brown from the Carlson School of Management at the University of Minnesota, where he taught MBA students and conducted research. At Brown, he is the Harrison S. Kravis University Professor and Paul Dupee Faculty Fellow and the Watson Institute for International Studies.

“I came to Brown for its intellectual firepower and diversity,” Levine said. “To understand economic development more...
comprehensively, I need to interact with a diverse set of scholars. Besides the joy of learning through these interactions, I hope they improve the quality and impact of my research.”


Glenn C. Loury

is an economist, social theorist, and public intellectual writing on the subjects of race, inequality and social policy. A fellow of the Econometric Society and of the American Academy of Arts and Sciences, and a past winner of the American Book Award, Prof. Loury’s most recent books are *The Anatomy of Racial Inequality* (Harvard University Press, 2002), and *Ethnicity, Social Mobility and Public Policy: Comparing the US and the UK* (Cambridge University Press, 2005).

His recent work focuses on two themes: (1) he has developed a theory of ‘racial stigma’ – in contrast to the classical notion of ‘racial discrimination,’ where the main idea is to distinguish the formal economic transactions of markets from the informal social interactions of neighborhoods, families and friendship networks. He cites a broad array of evidence to argue that racial inequality in contemporary American society derives more from disparate treatment in the latter than the former domains, and he speculates on the implications of this conclusion. (2) He has also developed a principled approach to questions of racial justice in the U.S. context. This work in social philosophy formulates the axiom that any concept of intergenerational justice must be ‘closed to moral deviation.’ He contributes to the debate over slavery reparations for American blacks by applying this axiom to the dynamic social choice problem which this debate implicitly poses.

In taking-up this new position at Brown, Professor Loury envisions launching a research program here organized around the themes of inequality, race and ethnicity, and social exclusion. This program would contribute to a rigorous multi-disciplinary conversation at Brown, starting from his home discipline of economics and expanding to draw on the allied social sciences.

His teaching includes an undergraduate course (EC 137) on racial inequality in U.S. society, and a graduate course (EC 237) on theories of economic inequality. He is also planning to introduce a course on “the political economy of punishment” in the fall of 2006.

**Reminder**

Brown Spring Forum: Economics, Entrepreneurship and Technology

April 28-30 with main Forum events
Saturday April 29, 2006, on the Brown Campus

Sponsored by the Department of Economics, the Brown Alumni Association, the Economics Department Undergraduate Group, the Division of Engineering, and the Entrepreneurship Program.

For details and registration visit: http://alumni.brown.edu/orgs/spring_forum or contact susan.farrell.72@alumni.brown.edu.

**Department A Recognized Leader in Growth and Development**

During the past few years, Brown’s Department of Economics has achieved increasing recognition as a leader in the fields of economic growth and economic development. Eleven professors, more than a third of the department’s faculty, do research in these fields, and the proportion of Ph.D. students writing their dissertations on growth and development is at least as great.

Department Chair Andrew Foster, a leading researcher on the applied microeconomics of development, organized the Northeast Universities Development Consortium meetings which were held at Brown for the first time this past October. Professor Oded Galor, who founded and edits the field-leading *Journal of Economic Growth*, will also begin editing *Foundation and Trend in Economic Growth*, a quarterly, in 2007. Professor David Weil is the author of one of the leading undergraduate textbooks on the topic, *Economic Growth* (Addison-Wesley, 2005), while Interim Chair (Spring, ’06) Peter Howitt co-authored with Harvard’s Philippe Aghion a leading graduate text, *Endogenous Growth Theory* (MIT Press). Another graduate text, *Unified Growth Theory*, is in preparation by Galor. Ross Levine, one of the most frequently cited contributors not only in the literature on economic growth but also in the economics profession as a whole, joined the Department in the 2005-06 academic year, and is one of four faculty members, joining Galor, Howitt, and Vernon Henderson, who contributed articles to the recent *Handbook of Economic Growth*. Development economist Mark Pitt runs Brown’s Population Studies and Training Center, while Professor Louis Putterman, who has published on both growth and development, runs the Development Studies concentration and masters program for the Watson Institute. Other faculty doing research in the two fields are Professor Kaivan Munshi and Assistant Professors Ashley Lester and Nancy Qian, who joined the faculty this year. A 2005 report by *U.S. News and World Report* ranked Brown 10th nationally in economic development, but informal rankings put the department in the top five nationally for the more macroeconomically-oriented field of economic growth.
School Choice in India

By Alaka Holla

The school-choice debate that is currently taking place in this country – whether competition among schools will lead to increased efficiency within schools or simply to further sorting of students by ability or race across schools - is perhaps of greater relevance to developing countries, where limited public sector capacity has made greater reliance on the private sector more of a reality than a controversial policy proposal. An understanding of the sorting processes that allocate students across schools is crucial for predicting subsequent inequality among groups. When given ample opportunity to separate, how will students of diverse socio-economic backgrounds sort? Will all of the high-income, high-ability students be concentrated in a few schools? Will parents sacrifice the potential benefits of school infrastructure and peer ability in order to send their children to schools with certain racial, caste, or ethnic compositions or to schools that teach in a certain language? What kinds of environments (e.g. areas with significant low-caste population shares or areas with high population density) make a certain type of sorting more likely?

The first chapter of my dissertation studies how heterogeneous students sort themselves across secondary schools in the Indian state of Karnataka during the 1996-2004 period, where there are two main languages of instruction (Kannada, the local language, and English) and many private options. For an examination of school-sorting, this is an interesting time, place, and level of schooling to study. After India’s economic liberalization in 1991, the returns to English education skyrocketed, especially in the state’s capital, Bangalore, and private high school construction also showed a marked acceleration. Also, with respect to caste, the state is diverse, with roughly 23% of its population being classified as scheduled caste or scheduled tribe (SC/ST) – groups that historically have suffered considerable social disadvantage. Furthermore, unlike the situation in the U.S. where about 24% of all elementary and secondary schools are private and a family’s place of residence usually determines which public school its children can attend – roughly 54% of Karnataka’s secondary schools are private and enrollment in public schools is completely open. Moreover, internal migration rates are pretty low, which eliminates the concern that families might move in response to geographical variation in school quality. Finally, all students who wish to progress beyond the 10th grade must pass a standardized matriculation exam that is administered across the state, with an average of 665,000 test-takers per year during my period of study.

Perhaps the personal motivation behind my research question stems from the year I took off after finishing my undergraduate degree here at Brown (2001). For seven months, I spent some time helping a small women’s welfare association set up a microfinance program in a Bangalore slum and tutoring participants’ children after school. There three features of the education system struck me. First, it was difficult, if not impossible, to find any young person living in the slum (most of whom were SC/ST) who had passed the 10th grade matriculation exam. Second, many of the slum’s poor parents had abandoned the public sector entirely and were sending their children to tuition-charging private schools. Finally, what constituted a school could range anywhere from a mud hut with few broken benches and a frazzled teacher trying to keep her students from wandering out of her sight to a state-of-the-art prep-school campus.

After returning to Brown and finishing my graduate coursework, I traveled back to Bangalore and knocked on several doors of Karnataka’s Department of Public Instruction (DPI). Luckily one of them opened and I was able to obtain nine years (1996-2004) of individual-level test-score data from Karnataka’s Secondary Education Examination Board (KSEEB) and school-level infrastructure data from the DPI. When combined with socio-economic information about the areas in which the secondary schools are located from the Indian Census and the Rural Development and Panchayath Raj Department, these data will allow me to ascertain (i) who (which castes, which ability-groups) goes to what kind of schools (public, private, homogenous with respect ability or caste) and (ii) what mitigates or exacerbates a given type of sorting (the spatial distribution of schools, the public-private or English-Kannada mix of schools, the heterogeneity of the population).

I see this research as relevant to two important policy goals in Karnataka – achieving universal secondary school matriculation and decreasing segregation by caste. First, consider an area in which
Family Owned Businesses: Living on or Fading Away?

By Nadia Merchant ’06

The topic for my thesis is “Cultural values and the Sustainability of Family-owned Businesses in India and Pakistan.” I was particularly interested in this subject as being brought up in Pakistan, and now studying in the U.S., I have become increasingly aware of the fact that there are strong motivational factors that drive countries such as Pakistan and India (two countries with strongly intertwined cultures with similar values) to maintain family businesses rather than imitating their more western counterparts and going public. Much of the youth of the two countries is educated abroad but is brought back to work in “family business” often willingly. This thesis critically examines family business culture and performance relative to non-family firms. It studies whether it is their shared identity and core value system that allows them to perform better or if family businesses continue even in the face of poor performance. As such the aim is to study whether, and the extent to which, the particular values and possibly notions of maintaining trans-generational wealth override considerations of financial performance. I would also like to explore whether family businesses hold up in the face of globalization and changing values and perceptions about businesses.

My thesis has an empirical focus. Using data from the World Values Survey (1981-1984, 1999-2002) from the ICPSR site (Inter University Consortium for Political and Social Research), I will be able to study the affects of family values, perceptions of business, as well as beliefs revolving around one’s job satisfaction from the period 1981-2002 on the sustainability of these businesses in the long run as a predominant mode of doing business in India and Pakistan.

When Terrorists Attack Abroad, Do Americans Fear Them?: An Economic Analysis of the London and Madrid Bombings

By Julia B. Kay ’06

Do terrorist bombings abroad cause fear at home? More precisely, can economics help us understand the behavior of civilians thousand of miles away from a recent terrorist attack? Previous work regarding fear and the economics of terrorism by Becker and Rubinstein (2004) looked at the domestic fear effects of suicide terrorism. They found that people respond to fear instead of risk, altering their behavior in response to low-probability events. But, they also found that people can invest to overcome their fears. The contribution of this thesis is to investigate how Americans, in a post-9/11 world, behave not after a domestic terrorist attack but after terrorist attacks an ocean away. Do they act as Becker and Rubinstein’s model predicts? If so, to what extent?

The subway bombings of March 2003 in Madrid and July 2005 in London provide a suitable scenario to assess this question. My research examines the extent to which they scared Americans. Using data for sales of different types of transport passes (daily, weekly, monthly) in major U.S. cities over a multi-year period, I measure the demand for subway services in the aftermath of the London and Madrid bombings. The thesis attempts to determine the extent of influence that terrorism abroad has on people’s behavior at home. It also examines how people’s fear correlates with the Federal Government’s color-coded threat level system, which certainly would have us believe that terror abroad breeds risk at home. Of the five times that the Department of Homeland Security raised the nationwide threat level to Code Orange, the most recent followed the July 2005 London subway bombings.

Overall, this research has implications for our understanding of the indirect impact of terrorism and, also, of other low probability but dramatic events. Diseases that instill worldwide fear such as SARS, Mad cow and the Avian flu all provide examples of low-probability phenomenon whose effects we can hope to better understand.
QUANTITY VS. QUALITY TRADE-OFF IN ACADEMIA:
Understanding the Production of Research Papers in Top U.S. Departments of Economics

by Elena Fernandez-Prados ’06

Academic life in U.S. universities is centered around research. In economic Ph.D. departments, the writing and publishing of academic papers take the lion’s share of the faculty’s total investment of time and effort. The ranking of academic journals in economics provides a powerful tool for measuring the ability of individual professors, as determined by the quality and the quantity of their published works.

The production of academic papers eventually determines the success of a professor’s career and his job status. Thus, from a purely economic viewpoint, the behavior of an economic professor is simply a form of utility-maximization subject to technological (quality) and time constraints. The problem of maximization requires choosing an optimal amount of quantity and quality of papers produced. But what determines the amount of quantity vs. quality that professors input in the production of papers?

Former models have analyzed the dynamics of quantity vs. quality trade-offs in other contexts such as families (Becker and Lewis, 1973, Galor and Weil, 1999). The theoretical component of my research will focus on applying and extending these models to the quantity quality trade-off faced by a professor in the production of academic papers.

From the empirical side, my objective is to identify what factors determine the amounts of quantity vs. quality supplied in the production of academic papers. Do professors with higher ability invest more in quality? Are lower-ability professors biased in favor of quantity? Can we identify a trade-off pattern to test these hypotheses? If so, how can it be quantified?

To answer these questions, I am gathering data on a sample of 200 full and associate professors from the top 20 Economic departments in the U.S. The data includes demographic variables such as gender, race, citizenship (U.S. citizen or foreign). It also includes research field, the number of published papers and the economic journals in which they where published. I will use an axiomatic method similar to that implicit in Google’s algorithm to measure quality, and I will control for coauthorship and whether the papers were published before or after the professor obtained tenure. The data set will also allow me to model quantity and quality over time in the production of papers, using the year of tenure as a reference point to assess possible changes in the amounts of quantity vs. quality supplied.

The empirical analysis will also characterize the professional path of professors (university where they got their Ph.D. from, where they held positions as assistant, associate and full professors). Applying a numerical ranking to each university will enable me to quantify the upward and downward sloping movements throughout a career. I would expect that they will be endogenous to the quantity and quality inputted in the production of papers.

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Henderson Assists Tsunami Relief Project in Aceh, Indonesia

Professor Vernon Henderson, working with a former Brown Ph.D. student, Ari Kuncoro, now a professor at the University of Indonesia, is engaged in a National Science Foundation funded project to study recovery of coastal villages and fishermen from the tsunami of December 2004. The team conducted extensive fieldwork in the devastated area last spring and then started surveying fishing boat owners and village heads in 110 villages in 3 districts of Aceh in the summer. A second round of surveying will be carried out in 2007.

In coastal villages, all housing and almost all boats were destroyed; less than half the population of villages survived and survivors are disproportionately adult males. The personal and social devastation is enormous and distressing to witness, although the efforts of individual village leaders, many of whom who lost their entire extended families, to try to restore livelihood and purpose to their villages is inspiring. There was no property insurance and the government has provided next to no aid for recovery, after the initial relief efforts. In fact the government has limited information on villages, with inaccurate maps of village locations. The survey team worked with Panglima Laot, the traditional fishermen’s association governing village fishing life, to construct village locations, draw a sample of pre-tsunami fishing boat owners, and identify village leaders.

After witnessing the devastation to people’s lives and working in these villages, Henderson wanted to help in some small way, as well as to increase awareness of the on-going situation. He worked with a group of Brown University students and local churches to raise money to pay for construction of fishing boats, distributed by lottery to fishermen without boats. So far there are three boats on the water and one more on order, each of which employ 5-13 people, depending on size. Monies raised through Providence Presbyterian church go to Panglima Laot to pay for the construction and outfitting of locally manufactured boats. More information is available at a student designed website: www.tsunamirelief-aceh.org.

Undergraduate Research Profiles

QUANTITY VS. QUALITY TRADE-OFF IN ACADEMIA:
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those who remained open in business there remains an incredible amount of financial pressure and strain. In other words the financial incentives for doctors have drastically changed in this drastically different health care market.

It might be fair to ask, what money has to do with the altruistic field of medicine? However numerous studies have shown that physicians do indeed pay heed to financial incentives. For example, the “induced demand” model in health economics suggests that physicians when faced with an income shock, will prescribe excessive treatment in order to keep their income levels constant. One study found that in New York and Washington states, Medicare fee reductions caused an increase in the volume of coronary artery bypass grafts being performed by physicians whose income was being affected the most (Yip, 1998).

In order to eliminate the gross inequalities in healthcare, one must first gain a solid understanding of the causes of these disparities. This is not a simple task as the health of a population is determined by a complex function of interrelated factors. This thesis attempts to explore one important factor in this vast and complicated puzzle. That piece is the effect of managed care on the supply of physicians available to minority patients. With the increased focus on cream-skimming healthy populations to contain costs in a managed care environment, there is reason to believe that there is a strong disincentive for physicians to treat minority patients. This, in turn, would have a severe detrimental effect on a population that has already been marginalized by the health care system.

To investigate this hypothesis, I am using data from the 1991 Young Physician Survey and the 1997 Resurvey of Young Physicians, which combine to form panel data on 1,500 physicians. I will run a series of fixed effects regressions with percentage of poor, Black, and Latino patients as the dependent variables to investigate the relationship between these variables and the income, perceived income, and payment method of the physicians to determine the impact of managed care on these particularly vulnerable populations.
Freakonomics in the Soccer Field and “The Beautiful Mind” of Professional Players

Professor Ignacio Palacios-Huerta

Economics is everywhere. And it is everywhere because it is simply an approach to human behavior. As such, it is not limited by the subject matter of specific fields or questions the way physics, history, engineering or psychology are. Take for instance, the scientific articles behind the different chapters of the international best seller *Freakonomics* by Steven D. Levitt. They are an excellent example of the full reach of the economic approach. Studying the behavior of sumo wrestlers, the choice of names that parents of different races give to their children, the impact of legalized abortion on crime, why drug dealers live with their mothers, and other unusual questions simply follow from what Economics is, a way to understand how we behave.

But Steve Levitt is not the only economist working these days in areas that would seem to fall way outside the traditional boundaries of economics. Economists, in fact, have been working on such questions for several decades. One reason for this is that we cannot conduct “controlled” experiments the way that physics, biology and other natural sciences do. And as a social science, but also a natural (our own nature) one, in Economics we have to get data anywhere we can. This is meant literally, anywhere.

The purpose of this article is to show that useful data that allow economists to test a number of economic theories which would otherwise remain untested can be gathered, of all places, in the soccer field. In the grass, looking carefully at how subjects involved in what in the opinion of many like me is the most beautiful game, soccer practices? Of course not. And this is one beauty of Economics. Moreover, he wants to be unpredictable. And his opponents, of course, behave the same way. While obviously poker players bluff, do they bluff the amount of times that Nash’s theory predicts? While obviously poker players are difficult to predict, are they entirely unpredictable as Nash’s theory predicts? These are difficult questions and we do not know the answer. Poker is a difficult game: there are lots of possible combinations of cards, and even though we could in principle see how players behave, and therefore test Nash’s theory, in practice the game is too complicated to be studied with Nash’s theory.

But, like Newton looking from an apple falling from a tree where he could test the theory of gravity, is there a simple setting where Nash’s theory can be tested? The difficulties may seem insurmountable, and can explain why over more than 50 years (his paper was first published in the early1950s) that theory has remained untested. Until recently. Let us get to the grass of a soccer field and look at a penalty kick. This situation is easy to write “mathematically.” In fact, it corresponds quite precisely to the most basic version of Nash’s theory: two individuals (kicker and goalkeeper) playing against each other must choose simultaneously between two actions: left or right. The setting is so crystal clear that it would seem to be an ideal place to test the theory. And indeed it is. I collected data on 1,417 penalty kicks, week after week, during the period September 1995–June 2000 from professional games in Spain, Italy, England, and other countries from the TV programs English Soccer League in the United States (Fox Sports World), Estudio Estadio in Spain (TVE), Noventessimo Minuto in Italy (RAI), and from various weekly programs on the European station Eurosport.

This is what I found: Soccer players play exactly as Nash’s theory predicts! Both kickers and goalkeepers choose the correct proportions of times to kick or go left and right. Not only this, they do it in such a way that they are entirely unpredictable by their opponent, exactly as unpredictable as knowing whether a fair coin is going to land heads or tails. But how can they do it with such incredible precision? Do coaches teach players Nash’s theories in soccer practices? Of course not. And this is one beauty of Economics. These players have very little education, do not know what game theory is, and yet they play as a theory of one of the most brilliant mathematicians of our time (he was not really an economist) predicts. They just do it, as the apple just falls from the tree. And Nash is right.

Example 2: The Referee. This example deals with corruption, in particular with social pressure as a determinant of corruption. In general, social forces as determinants of human behavior have been studied both theoretically and
empirically by economists and other social scientists for decades. But finding that social pressure may cause corruption would seem a notoriously difficult task to document. For instance, consider a judge that has to rule in a controversial case. His job is to rule impartially, but he might feel pressure to lean one way if somebody bribes him and, why not, he might also feel the heat of the pressure of public opinion. Monetary bribes, in principle, are observable (although the parties involved will go to great lengths to conceal what they are doing), but how can the heat of social pressure be ever observed? That is, how can it be proven that a judge is yielding to the preferences of the public rather than making an objectively and perfectly fair decision? This would seem, again, an almost impossible task. And not surprisingly, although theoretically possible, there is no evidence that social pressure may cause corruption.

But again, let us get to the soccer field. The judge in the field, the referee, has to make many decisions throughout a game. One of the decisions he makes is the amount of extra time to give at the end of a game to compensate for lost time due to unusual stoppages. In a recently published research paper, Luis Garicano, Canice Prendergast and I find that referees systematically favor home teams by shortening close games where the home team is ahead, and lengthening close games where the home team is behind. They show no such bias for games that are not close. We also identify that the mechanism through which this bias operates is to satisfy the crowd in the stadium by documenting how the size and the composition of the crowd affect referee favoritism.

Soccer, and sports in general, provides other examples of situations where economic theories can be tested ranging from the theories of discrimination (how much professional soccer clubs in England are willing to give up not to hire players of certain races?) to the impact of police on crime (what happened in the NBA when a third referee was introduced?), and many others.

These are not cute questions of interest to people that like sports. These are economic questions tested with sports data, the same way that physicists study apples but to test theories that are important in physics. If you like soccer, or sports in general, looking at these questions may, of course, have the additional benefit that you will look at the game in a somewhat different way, although now that I think about it, it need not be a benefit. You tell me after the upcoming 2006 World Cup in Germany this summer.


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**Freakonomics continued from page 9**

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**Alumnus Randall Kroszner Joins Federal Reserve Board of Governors**

The White House tapped Randall S. Kroszner on January 27 to fill one of two vacancies on the seven-member Federal Reserve Board of Governors. A professor at the University of Chicago's Graduate School of Business, Kroszner was an undergraduate Economics concentrator at Brown in the early 1980s, then earned his Ph.D. in Economics at Harvard. His research specialties cover international and domestic banking as well as financial institutions and their regulation. Until his nomination, he was an editor of the Journal of Law & Economics and director of the George J. Stigler Center for the Study of the Economy and the State at the University of Chicago. He also served as a member of the President's Council of Economic Advisers from 2001 to 2003. Kroszner's nomination was confirmed by the full Senate in February, and he assumed his new position on March 1.

Kroszner’s research interests include conflicts of interest in financial services firms, international and domestic banking and financial regulation, corporate governance, debt defaults and bankruptcy, international currency and banking crises, monetary economics, and political economy. He has been quoted widely in the business press, has appeared on numerous television and radio programs, and recently testified before the Senate Finance Committee on pension reform issues.

Kroszner was already making his mark while an undergraduate at Brown. He helped Economics Professor Louis Putterman to develop a course on economic thought and philosophy that was offered to Brown undergraduates for almost twenty years. He also helped Putterman to compile the book The Economic Nature of the Firm before graduating magna cum laude in 1984. Kroszner became co-editor in that book’s 1996 edition, and the day before being sworn in to his current position with the Federal Reserve, he and Putterman agreed on the table of contents for its third edition!

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**Not Worth It? continued from page 8**

If it is true that managed care organizations do negatively affect the supply of physicians to minority patients, there are strong policy implications. We as a society must strive to provide health care to all, not just to a select few. This may mean that we must modify the managed care environment to ensure that vulnerable populations are served appropriately. In other words, this thesis hopes to shed light on the necessity to realign the incentives of minority patients and the physicians who treat them, to ensure the optimal outcome for all.

**LITERATURE CITED**


KaiserEDU.org: www.kaiseredu.org


Cooperation is critical to the functioning of both economic and political organizations, but standard economic theory has long predicted that rational people will fail to cooperate when they interact in groups for any specific number of periods. In their recently published article, “Voluntary Association in Public Goods Experiments: Reciprocity, Mimicry and Efficiency,” economics professors Talbot Page and Louis Putterman and former student Bulent Unel, currently teaching at the University of Texas in Austin, report that when experiment subjects get to choose who they associate with, cooperative individuals band together to defend against opportunists, and the incentive to acquire a good reputation leads even some opportunists to act more cooperatively. The article appears in the January 2005 issue of the Economic Journal, the journal of the Royal Economic Society of Britain.

The researchers placed subjects in small groups and had each make a series of decisions about whether to retain an endowment of money for him- or herself or contribute it toward a group project. Group members were better off when all contributed than when none did, but individuals could be better off still by letting others contribute while holding on to their own money. Without freedom of association, experimenters have found that contributions decline over time as more cooperative individuals tire of being taken advantage of by more selfish ones. But with freedom to rank prospective group members and periodic formation of new groups on the basis of the rankings, the new experiment found that cooperation was both initially greater and more sustained.

By itself, the authors explain, standard theory predicts that voluntarily based regrouping should make no difference to cooperation levels if people are strictly self-interested and believe this to be true of others. The authors show why the presence of cooperation in their experiment demonstrates that their subjects generally believed that some of them could be genuinely inclined to cooperate, even at some sacrifice of their material payoffs. The presence of cooperation in the experiment demonstrates that subjects believed that some could be genuinely inclined to cooperate, even at some sacrifice of their material payoffs.

The experiment is related to experiments of researchers at the University of Zurich, led by economist Ernst Fehr, who've provided evidence that many people have a taste for punishing selfish behavior, and whose articles in the journal Nature have received publicity in The Economist, The New York Times, and elsewhere. These researchers found that the opportunity to impose costly punishments (sanctions) on others is a way to sustain cooperation in the laboratory and, by extension, in some real group situations. The authors of the present article compare the effects of voluntary regrouping to the effects of punishment. They find that both the opportunity to punish and the opportunity to regroup were similarly effective in inducing cooperation, but the group formation treatment generated more benefits because punishing carries costs both to the punishers and to those punished. The combination of punishment opportunities with control over group composition also gave less benefit than the latter alone. The new research qualitatively replicates many aspects of Fehr's work and that of Indiana University’s Elinor Ostrom. All three sets of researchers see themselves as helping to demonstrate the presence of cooperative propensities that can be harnessed for social benefit by careful institutional design. All three research groups also conclude that their findings call for a rethinking of some aspects of economic theory.

The Economic Journal paper is one of eight academic papers resulting from research that Page and Putterman have conducted and analyzed with their graduate students during the past six years. Other papers have appeared or are in press at Experimental Economics, Games and Economic Behavior, the Journal of Public Economics, and the Journal of Economic Behavior and Organization. At a January, 2006 conference at the Max Plank Institute in Jena, Germany, Page and Putterman were pleased to find that their work together had helped to put experimental economics at Brown “on the map” for colleagues from other U.S. institutions, and from Canada, the UK, Spain, Germany and Switzerland.
Ignacio Palacios-Huerta was promoted to Professor of Economics effective July 1, 2005.

Kaivan Munshi was promoted to Professor of Economics effective July 1, 2006.

Rachel Friedberg was promoted to Senior Lecturer effective July 1, 2006.


On April 28 and 29, the department is hosting a conference in memory of Professor Herschel Grossman, who died on October 9, 2004. The conference brings together several distinguished scholars from around the country as well as many of Professor Grossman’s former doctoral students. The topics addressed at the conference will include political economy and the economics of conflict. The conference is being organized by former student Michelle Garfinkel of the University of California, Irvine and David Weil of Brown.

Imagine a second situation in which the government wants to make schools more representative of their area’s caste composition. It could mandate caste-quotas across all types of schools. If the degree of caste segregation, however, is affected by the mix of English and Kannada schools – so that non-SC/ST parents are willing to tradeoff homogeneity for instruction in English – then there may be a more politically feasible option. The government could either construct more English government schools or create incentives for SC/ST students to attend the existing English schools.